Automatic drilling *at lowest cost*

with

ARO®

Self-feed Air Powered DRILLING UNITS

408/130

ARO'S COMPLETE LINE OF INDUSTRIAL AIR TOOLS

INCLUDES DRILLS • TAPPERS • SCREWDRIVERS • NUTSETTERS

MULTIDRIVERS • GRINDERS • SANDERS • WIRE BRUSH TOOLS

AIR HOISTS • SELF-FEED DRILLING UNITS • POWER TOOLS

SPECIAL TOOLS • AIR EQUIPMENT ACCESSORIES

Par-A-Matic Drills — Portable and Stationary, 1/4" Capacity

Par-A-Matic Drills are compact, self-feeding production tools . . . adaptable to widest range of applications . . . simple to install and set up . . . use singly or in multiples. Can also be adapted to burring, wire brushing, grinding, screwdriving and nutsetting.

MODEL PO-21-2A STATIONARY, 2100 RPM

MODEL PO-5-2A PORTABLE, 500 RPM

MODEL PO-50-2A STATIONARY DRILL WITH OPTIONAL REMOTE CONTROL HEAD NO. 35956

PORTABLE OR STATIONARY OPERATION. Precision-ground sleeve can be accurately mounted for stationary operation. Nose housing of portable drill accepts drill and lock bushings.

AUTOMATIC OR SEMI-AUTOMATIC. 3-position valve on cylinder head allows many types of remote-control linkage. One operator can control any number of drills.

ADJUSTABLE STROKE LENGTH. From 3/8" to 2", in increments of 1/32". Adjustment screw beneath name plate.

SIMPLIFIED VALVING. Manual control valve, needle valve for feed-rate control, and 3-position valve for type of advance and retraction desired.

POSITIVE PISTON ACTION. Piston is advanced by compressed air against light spring. In retraction, the spring returns piston to its starting position. Piston develops thrust from 0 to 160 lbs.

INTERCHANGEABLE GEARING. Any drill can be converted to one of six other speeds through change of gear reduction. Instructions on page 7.

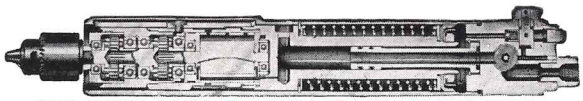
QUIET EXHAUST. Reduces noise level without loss of power.

STANDARD EQUIPMENT. O-series motor and gearing, No. 30209 1/4" chuck and key, air inlets as illustrated below. Portable models have standard nose housing as listed below. No. 36497 Special Wrench for removing piston assembly.

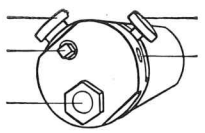
OPTIONAL EQUIPMENT. No. 30510 5/16" chuck and key; No. 32377 hose adapter for piston inlet, 1/8" male N.P.T.F. x 1/8" female N.P.T.F. Portable models have optional nose housings as listed below. For other accessory equipment (at extra cost) see pages 2, 6 and 8. Recommended hose size, 5/16".

DIMENSIONAL DATA on pages 11, 12, 13, 14 and 15.

35956 REMOTE CONTROL HEAD. Can be substituted without charge when requested. Has single air inlet for motor and piston, needle valve and combination manual or remote-control starting button. For remote-control operation, needs No. 35036 Air Piston (see page 6). Manual feature of starting button is often desirable for portable applications.



CUT-AWAY VIEW OF DOUBLE-REDUCTION DRILL



STATIONARY MODELS			PORTABLE MODELS				
Model No.	R.P.M.	Weight	Model No.	R.P.M.	Weight	Standard Nose Housing	Optional Nose Housings
PO-170-2A	17,000	6.3 lbs.	PO-170-2P	17,000	5.8 lbs.	35723 3/4"-16	35721 1"-14 or 36494 1¼"-12
PO-50-2A	4,600	6.3 lbs.	PO-50-2P	4,600	5.8 lbs.	35723 3/4"-16	35721 1"-14 or 36494 1¼"-12
PO-28-2A	2,800	6.3 lbs.	PO-28-2P	2,800	5.8 lbs.	35721 1"-14	35723 3/4"-16 or 36494 1¼"-12
PO-21-2A	2,100	6.3 lbs.	PO-21-2P	2,100	5.8 lbs.	35721 1"-14	35723 3/4"-16 or 36494 1¼"-12
PO-14-2A	1,450	6.8 lbs.	PO-14-2P	1,450	6.3 lbs.	35720 1"-14	35722 3/4"-16 or 36495 1¼"-12
PO-8-2A	850	6.8 lbs.	PO-8-2P	850	6.3 lbs.	35720 1"-14	35722 3/4"-16 or 36495 1¼"-12
PO-5-2A	500	6.8 lbs.	PO-5-2P	500	6.3 lbs.	35720 1"-14	35722 3/4"-16 or 36495 1¼"-12

Tap-A-Matic Tappers

Same as Stationary Par-A-Matics above but equipped with tapping head and chuck. Use with Selector Valve in No. 2 position with air supply to motor and piston inlets; motor remains in rotation during retraction. 1½" stroke length on all tappers.

STANDARD EQUIPMENT. O-series motor and gearing, tapping head, 31432 Tapping Chuck, No. 10 - 5/16" capacity. No. 36497 Special Wrench for removing piston assembly.

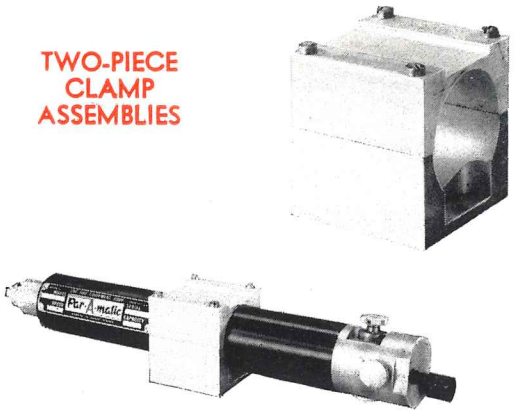
OPTIONAL EQUIPMENT. No. 32377 hose adapter for piston inlet, 1/8" male N.P.T.F. x 1/8" female N.P.T.F., 31427 Tapping Chuck, 0 - 1/4" capacity. Available at extra cost, No. 32063 Tapping Chuck, 5/16" - 5/8" capacity. See also pages 2 and 6 for other accessory equipment. Recommended hose size, 5/16".

MODEL PO-5-2T, 500 RPM

DIMENSIONAL DATA on pages 11 and 16.

Model No.	R.P.M.	Weight
PO-14-2T	1,450	7.5 lbs.
PO-8-2T	850	7.5 lbs.
PO-5-2T	500	7.5 lbs.

TWO-PIECE CLAMP ASSEMBLIES

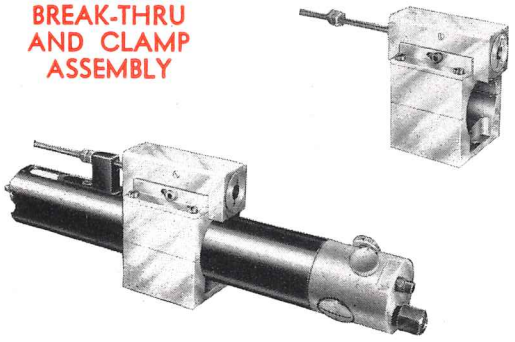


CLAMP ASSEMBLIES FOR PAR-A-MATIC AND BANT-A-MATIC DRILLS.

2-piece cast aluminum clamp gives rigid mounting. Compact design allows close mounting of drills in series. Top half has milled slot to accept Break-Thru Attachments described below. Bottom half is ported to allow for exhaust-air passage; has counterbored holes for mounting with 1/4" socket-head cap screws, plus two 5/16"-18 tapped holes for mounting from underside.

PAR-A-MATIC CLAMP		BANT-A-MATIC CLAMP	
No. 35283	Length 2½"	No. 36042	Length 2½"
Width 2⅝"	Height 2¾"	Width 2 3/16"	Height 2 5/32"
Dimensional Data on Page 9		Dimensional Data on Page 10	

HYDRAULIC BREAK-THRU AND CLAMP ASSEMBLY

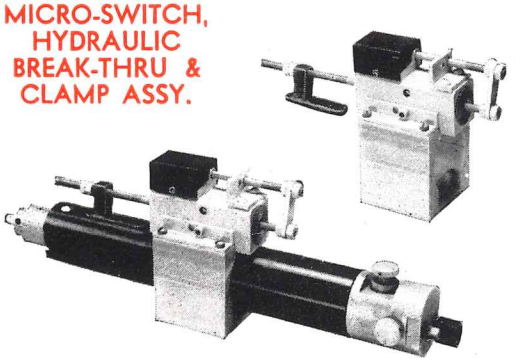


HYDRAULIC BREAK-THRU ATTACHMENTS.

For controlled thrust during and after break-through. Adjustable stop nuts allow hydraulic action to be engaged at any point in traverse; when engaged it will continue for 1/2". Stop plate attaches to gear housing of drill after removal of name plate. Use of Hydraulic Break-Thru permits safe utilization of faster speeds and feeds. Has needle-valve adjustment.

Description	Par-A-Matic	Bant-A-Matic
Hydraulic Break-Thru & Clamp Assy.	36921	36925
Hydraulic Break-Thru Assy. only.	36251	36928

MICRO-SWITCH, HYDRAULIC BREAK-THRU & CLAMP ASSY.

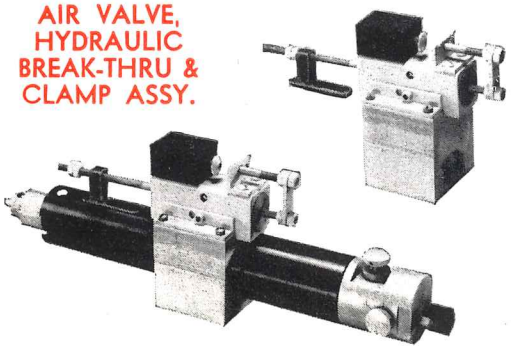


HYDRAULIC BREAK-THRU WITH MICRO-SWITCH.

Provides same hydraulic break-through control described above, with micro-switch action for automatic retraction. Switch rod at rear of unit allows micro-switch operation to be adjusted independently, so that it follows the break-through at a precisely timed interval. (To order Micro-Switch and Actuator Assy. only, specify No. 36924.)

Description	Par-A-Matic	Bant-A-Matic
Micro-Switch, Hyd. Break-Thru & Clamp Assy.	36923	36927
Micro-Switch & Hyd. Break-Thru Assy. only.	36592	36929

AIR VALVE, HYDRAULIC BREAK-THRU & CLAMP ASSY.



HYDRAULIC BREAK-THRU WITH AIR VALVE.

Provides same hydraulic break-through control described above, with air valve for automatic retraction. Valve rod at rear of unit allows air-valve operation to be adjusted independently, so that it follows the break-through at a precisely-timed interval. (To order Air Valve and Actuator Assy. only, specify No. 36933.)

Description	Para-A-Matic	Bant-A-Matic
Air Valve, Hyd. Break-Thru & Clamp Assy.	36922	36926
Air Valve & Hyd. Break-Thru Assy. only.	36586	36930

Bant-A-Matic Drills, 3/16" Capacity

PORTABLE MODEL BA-8-P, 800 RPM

STANDARD MODEL, BA-30, 3,000 RPM

Bant-A-Matic Drills are self-feeding units similar to Par-A-Matics on page 1 but smaller in size and with simplified valving. Designed with Aro 000-Series motor and gearing. 2" stroke length, adjustable in increments of 1/32". Stroke adjustment accessible when name plate is removed.

Standard and Portable models have combination manual and remote-control head. Push-button allows manual operation when desired. Thru-Head models (not illustrated) are meant for remote-control only, and provide separate air inlets to motor and piston. All models have needle-valve feed-rate control.

Portable Bant-A-Matics are used with Lock Bushings on page 8. It is recommended that Standard and Thru-Head models be used with No. 36042 Mounting Clamp.

STANDARD EQUIPMENT. All models have No. 30509 3/16" Chuck with key, 1/8" female N.P.T.F. air inlets. No. 36734 Special Wrench for removing piston assembly. Portable and Standard models have remote-control head, as illustrated, with single air inlet to motor and piston. Thru-Head models (not illustrated) have separate air inlets to motor and piston. Nose housings on Portable models have 3/4"-16 female thread.

OPTIONAL EQUIPMENT. No. 36255 Lock-Down Throttle can be substituted when requested, at no extra cost. Similar to throttle head shown above but has built-in push button which may be used manually or locked in running position. Extra-cost optional equipment includes drill bushings and lock bushings on page 8, accessories on page 6, and No. 36042 Mounting Clamp with break-thru attachments on page 2, opposite. Recommended hose size, 5/16".

DIMENSIONAL DATA given on pages 17, 18 and 19.

STANDARD BANT-A-MATICS				THRU-HEAD BANT-A-MATICS				PORTABLE BANT-A-MATICS				
Model No.	R.P.M.	Weight	Gear Reduction	Model No.	R.P.M.	Weight	Gear Reduction	Model No.	R.P.M.	Weight	Gear Reduction	Nose Housing
BA-200	20,000	3.19 lbs.	Single	BA-200-R	20,000	3.13 lbs.	Single	BA-200-P	20,000	3.45 lbs.	Single	35918
BA-45	4,500	3.19 lbs.	Single	BA-45-R	4,500	3.13 lbs.	Single	BA-45-P	4,500	3.45 lbs.	Single	35918
BA-30	3,000	3.19 lbs.	Single	BA-30-R	3,000	3.13 lbs.	Single	BA-30-P	3,000	3.45 lbs.	Single	35918
BA-8	800	3.46 lbs.	Double	BA-8-R	800	3.42 lbs.	Double	BA-8-P	800	3.81 lbs.	Double	35917

Midg-A-Matic Drills, 1/16" Capacity

INDUSTRY'S SMALLEST SELF-FEED DRILL

THRU-HEAD MODEL MR-200, 20,000 RPM

STANDARD MODEL M-200, 20,000 RPM

Midg-A-Matic Drills are small, high-speed, simplified self-feed drilling units. Single speed of 20,000 rpm is more than adequate for drilling holes 1/16" or less. Air piston develops thrust of 30 lbs. at 90 psi.

Standard model has combination push-button and remote-control head. Push-button allows manual operation; attachment of 35036 Air Piston (page 6) permits remote-control operation when desired. Thru-Head model is intended for remote-control operation only. Both models have needle-valve feed-rate control and single air inlet to motor and piston. Maximum stroke length is 1 3/8", adjustable in increments of 1/4". Stroke adjustment accessible after removing name plate.

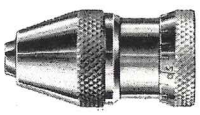
It is recommended that any Midg-A-Matic be installed with No. 36659 Mounting Clamp below.

STANDARD EQUIPMENT. One 1/8" female N.P.T.F. air inlet for motor and piston, No. 0 taper spindle, 30442 1/8" Chuck with No. 0 taper (key included).

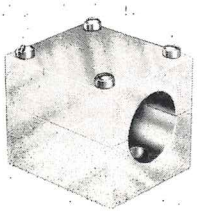
OPTIONAL EQUIPMENT at extra cost. No. 35742 Precision Chuck or No. 36659 Mounting Clamp below, remote-control accessories on page 6. Recommended hose size, 3/16".

DIMENSIONAL DATA given on page 20.

STANDARD DRILL		THRU-HEAD DRILL		R.P.M.	Capacity
Model No.	Weight	Model No.	Weight		
M-200	1.47 lbs.	MR-200	1.47 lbs.	20,000	1/16"

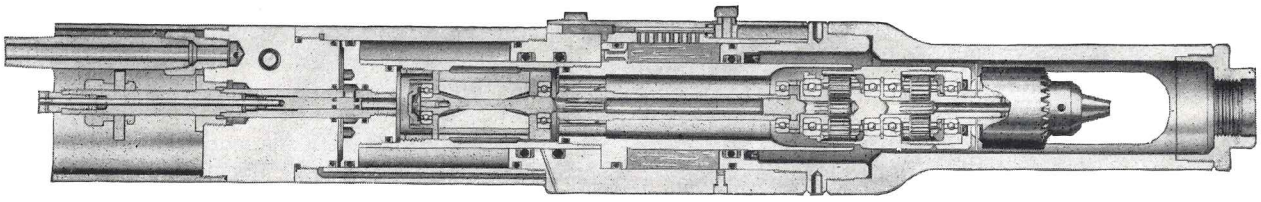


NO. 35742 ALBRECHT PRECISION CHUCK. (Order separately.) Has extremely small offset and is built to finest precision standards. Run-out held to a minimum. Micrometric markings on barrel can be read to insure that smaller drills are firmly engaged by all three jaws. Has No. 0 taper to fit standard spindle of Midg-A-Matic Drill.

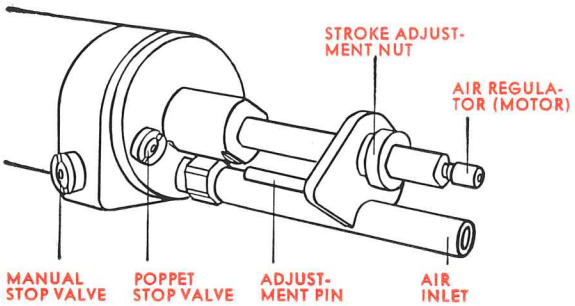


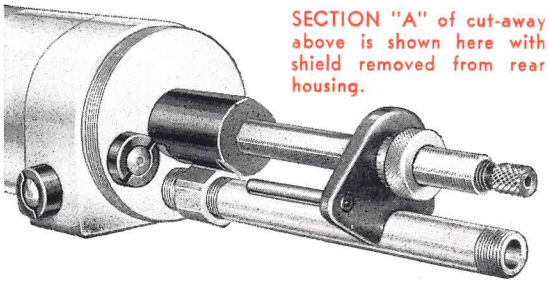
NO. 36659 MIDG-A-MATIC MOUNTING CLAMP. (Order separately.) Designed specifically for Midg-A-Matic Drills. 2-piece clamp allows rigid, accurate mounting of single drill, and is small enough to allow mounting of a series of Midg-A-Matics with very small center allowances. Dimensions on page 10.

Automatic Drills — 2", 4", 6" Stroke Lengths



SECTION A CUT-AWAY VIEW OF 2"-STROKE-LENGTH DRILL





SECTION "A" of cut-away above is shown here with shield removed from rear housing.

Aro Automatic Drills furnish push-button drilling, for faster production with fewer man-hours. Simply press the starting button and the Drill performs a complete cycle, automatically . . . motor starts, drill traverses rapidly to the work, drills hole at pre-set feed rate, then retracts and shuts off when hole is completed. For widest range of materials, from thin sheets to toughest alloys. Can be used singly or in multiple set-ups, with portable handling or stationary mounting. All Drills have these cost-cutting, production-boosting quality features:

4-WAY VALVE FOR STARTING AND STOPPING. Piston-type poppet valve can be operated manually or by remote control to start cycle and provide automatic return. Remote-control accessories listed on page 6.

ADJUSTABLE-SPEED MOTOR. Air regulator screw allows fine adjustment of motor speed. Also allows operator to shut off air to motor only and advance piston, under power, for drill changing.

ADJUSTABLE STROKE LENGTH. Stroke Adjustment Unit (see two illustrations above) has micrometric adjustment nut with graduated markings. Allows stroke-length settings accurate to .002". After setting has been made, a hex nut is turned down tightly against adjustment plate.

BUILT-IN AUTOMATIC RETURN. Has simple design with fewest working parts. Adjustment pin (see illustrations above) is mounted on a plate which in turn is accurately guided by air inlet pipe. Pin moves forward at same rate as drill feed. At pre-set point it touches Poppet Stop Valve, which retracts drill and shuts off motor. Entire mechanism enclosed by removable sleeve.

LONGER RAPID TRAVERSE. Cuts costs by reducing time cycle, and can be set while tool is running. Knob is positioned on graduated scale.

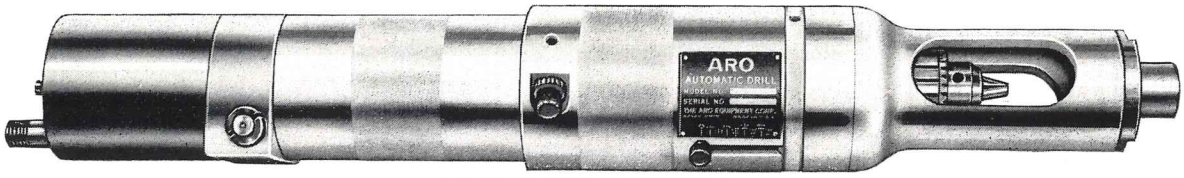
INTERCHANGEABLE GEARING FOR SPEED CONVERSION. Any drill can be converted to one of four other speeds by adding, removing or substituting gear assemblies. Conversion can usually be done on the job. Complete conversion data on page 7.

HYDRAULIC FEED CONTROL. Gives positive, stable control of feed rate. Has wide latitude of adjustment, according to job requirements. Setting can be made while tool is running. External fitting allows chamber to be filled with hydraulic fluid without disassembly of tool. Auxiliary Fluid Reservoir (optionally available at no extra cost) can be attached to housing in place of fitting; automatically maintains a full charge of hydraulic fluid in chamber and gives visual indication when refilling is necessary.

PORTABLE OR STATIONARY OPERATION. Complete range of Drill and Lock Bushing Assemblies available for portable operation; see page 8. Liner Bushing Assemblies available for stationary operation; see page 9.

FULL RANGE OF ACCESSORIES. Your Aro distributor can furnish accessory equipment needed for correct installation; see pages 6 and 8. For Air Line Accessory Equipment, refer to Section 9 of this catalog.

Automatic Drills — 2" Stroke Length



MODEL B1-46-2A, 4,600 R.P.M.

STANDARD EQUIPMENT. Furnished complete as illustrated with one chuck and nose housing adapter. When ordering, refer to page 6 and specify desired chuck and adapter by part number.

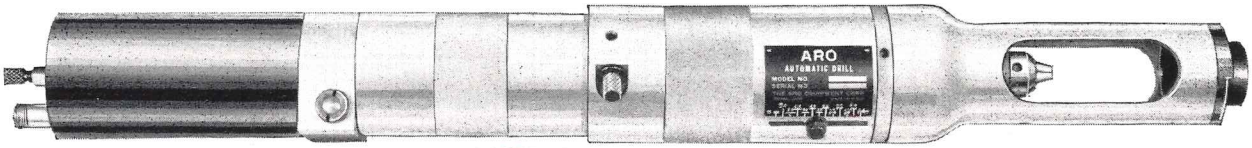
OPTIONAL EQUIPMENT. No. 36900 Auxiliary Fluid Reservoir supplied without cost when specified. Other accessory equipment, at extra cost, listed on pages 6 and 8. Recommended hose size, 3/8".

DIMENSIONAL DATA on pages 21, 22 and 23.

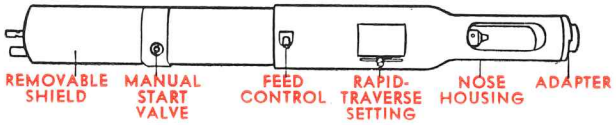
Max. chuck capacity .....1/2"
Spindle thread .....1/2"-20
Max. rapid traverse .....1 15/16"
Nose housing thread (female) .....2 3/8"-16 LH
Thrust capacity of piston at 90 psi .....500 lbs.

Model No.	Speed	Net Weight	Gear Reduction	Capacity	
				Mild Steel	Alum., Brass
B1-46-2A	4,600	19 lbs.	Single	1/4"	5/16"
B1-25-2A	2,500	19 lbs.	Single	5/16	3/8"
B1-12-2A	1,200	19 1/2 lbs.	Double	3/8"	1/2"
B1-6-2A	650	19 1/2 lbs.	Double	1/2"	1/2"
B1-3-2A	350	19 1/2 lbs.	Double	1/2"	1/2"

Automatic Drills — 4" Stroke Length



MODEL B1-12-4A, 1,200 R.P.M.



STANDARD EQUIPMENT. Furnished complete as illustrated, with one chuck and nose housing adapter. When ordering, refer to page 6 and specify desired chuck and adapter by part number.

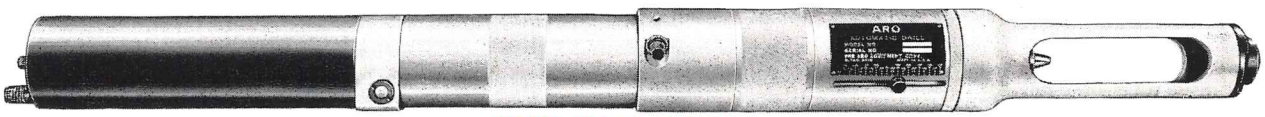
OPTIONAL EQUIPMENT. No. 36900 Auxiliary Fluid Reservoir supplied without cost when specified. Other accessory equipment, at extra cost, listed on pages 6 and 8. Recommended hose size, 3/8".

DIMENSIONAL DATA on pages 21, 24 and 25.

Max. chuck capacity .....1/2"
Spindle thread .....1/2"-20
Max. rapid traverse .....2 7/8"
Nose housing thread (female) .....2 3/8"-16 LH
Thrust capacity of piston at 90 psi .....500 lbs.

Model No.	Speed	Net Weight	Gear Reduction	Capacity	
				Mild Steel	Alum., Brass
B1-46-4A	4,600	21 1/2 lbs.	Single	1/4"	5/16"
B1-25-4A	2,500	21 1/2 lbs.	Single	5/16	3/8"
B1-12-4A	1,200	22 lbs.	Double	3/8"	1/2"
B1-6-4A	650	22 lbs.	Double	1/2"	1/2"
B1-3-4A	350	22 lbs.	Double	1/2"	1/2"

Automatic Drills — 6" Stroke Length



MODEL B1-3-6A, 350 R.P.M.

STANDARD EQUIPMENT. Furnished complete as illustrated, with one chuck and nose housing adapter. When ordering, refer to page 6 and specify desired chuck and adapter by part number.

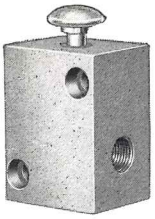
OPTIONAL EQUIPMENT. No. 36900 Auxiliary Fluid Reservoir supplied without cost when specified. Other accessory equipment, at extra cost, listed on pages 6 and 8. Recommended hose size, 3/8".

DIMENSIONAL DATA on pages 21, 26 and 27.

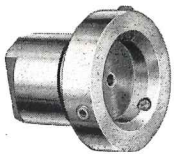
Max. chuck capacity .....1/2"
Spindle thread .....1/2"-20
Max. rapid traverse .....4 7/8"
Nose housing thread (female) .....2 3/8"-16 LH
Thrust capacity of piston at 90 psi .....500 lbs.

Model No.	Speed	Net Weight	Gear Reduction	Capacity	
				Mild Steel	Alum., Brass
B1-46-6A	4,600	27 1/2 lbs.	Single	1/4"	5/16"
B1-25-6A	2,500	27 1/2 lbs.	Single	5/16	3/8"
B1-12-6A	1,200	28 lbs.	Double	3/8"	1/2"
B1-6-6A	650	28 lbs.	Double	1/2"	1/2"
B1-3-6A	350	28 lbs.	Double	1/2"	1/2"

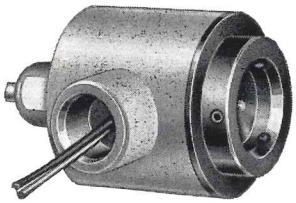
ARO ACCESSORIES FOR SELF-FEED DRILLS



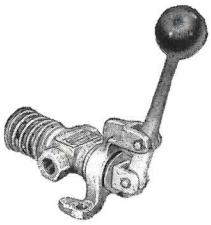
35035 3-WAY VALVE. For push-button control. Use with 35036 Air Piston at right. Delivers air pressure, through hose, to air piston mounted on drill head; instant piston action starts drill cycle.



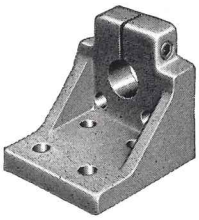
35036 AIR PISTON. Use with 35035 3-Way Valve at left. Fits all Automatic Drills and any self-feed drills equipped with remote-control head. Piston responds to air pressure to start drill cycle. 1/8" female N.P.T.F. air inlet.



35050 SOLENOID CONTROL. For electrical remote-control of Automatic Drills ONLY. Internal mounting diameter fits Manual Start or Stop Valve. Standard conduit inlet. Electrical impulse actuates piston to start drill cycle. Also used for manual testing of set-up.



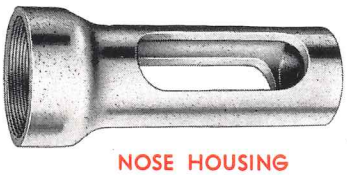
THREE-WAY AND FOUR-WAY VALVES. Available through your Aro distributor. Selected range of valves with foot-pedal, lever or cylinder operation, plus solenoid control where electrical circuit is required. Can be adapted to almost any type of remote-control installation.



34925 MOUNTING BRACKET FOR AUTOMATIC DRILLS. For all stationary applications. 1¼" I. D. mounting diameter accepts all Liner Bushing Adapters on page 8. Made of ductile iron, with bottom and end faces machined square and flat in relation to mounting hole and drill axis. Dimensional data on page 28.

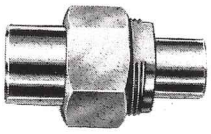
33905 AUXILIARY HANDLE FOR AUTOMATIC DRILLS. For portable applications, where drill must be lifted by operator and repositioned after each cycle. Mounts firmly to drill housing at any position in 360° range. Also aids in locking and unlocking between cycles.

NOSE HOUSINGS FOR AUTOMATIC DRILLS. Whenever the gearing on an Automatic Drill is changed from single to double reduction or vice versa, it is necessary to change the Nose Housing. Table below shows correct Nose Housing required according to stroke length of drill. Also see gear conversion data on page 7.



NOSE HOUSING

No.	Length	Type of Drill Used On
33908	6 15/16"	2" & 4" Single Reduction
33768	8¾"	2" & 4" Double Reduction
34156	8 5/16"	6" Single Reduction
34155	10⅛"	6" Double Reduction



PRECISION COLLETS FOR AUTOMATIC DRILLS

Available on special order through your Aro distributor. Furnished as complete assemblies; all collet chucks have 1/2"-20 fem. thd. to fit spindle of any Automatic Drill. Each successive size increases by 1/32".

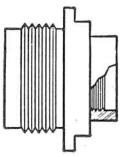
SERIES 35074 17 sizes from 1/4" to 3/4".
SERIES 35069 11 sizes from 1/4" to 9/16".
SERIES 35079 9 sizes from 1/8" to 3/8".

636-012 GREASE INJECTOR

For servicing all flush-type grease fittings. Attach to hydraulic coupler of any standard hand-gun or pressure lubricator, apply tip to fitting, and lubricate.

36460 O-LUBE. For use on O-rings, where smoothest possible action is desired. Furnished in 4-ounce tube, boxed.

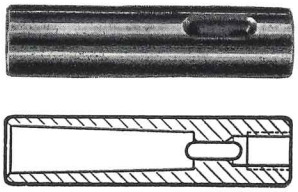
NOSE HOUSING ADAPTERS FOR AUTOMATIC DRILLS



Every Automatic Drill is furnished with any ONE of the Adapters below; specify by part number. All thread sizes are for female threads.

No.	Thread	No.	Thread
33764	1¼"-12	33812	3/4"-16
33751	1" -14	34075	1½"-12

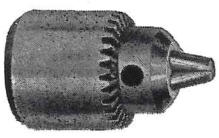
TAPER SHANK ADAPTERS FOR AUTOMATIC DRILLS



Available on special order. 1/2"-20 female thread fits drill spindle. Use with correct nose housing as shown in table below.

Part No.	Morse Taper No.	Use w/Nose Housings Below	
		Single Reduction	Double Reduction
35211	1	34156	34155
31394	2	34156-33768	34155

CHUCKS FOR AUTOMATIC DRILLS. Choice of any ONE with each Automatic Drill; key included. Specify by part number.



Chuck No.	Size	Thread
36238	1/4"	1/2"-20
36239	5/16"	1/2"-20
36237	3/8"	1/2"-20
36236	1/2"	1/2"-20

Gear Conversion for Automatic Drills

GEAR RATIO, BASIC R.P.M., ASSEMBLY NO.	To convert to a required speed, start with sub-assembly numbers in column at left and read across. All gearing is 22-series, non-reversible, 1/2"-20 threaded spindle.					
	4,600 R.P.M.	2,500 R.P.M.	1,200 R.P.M.	650 R.P.M.	350 R.P.M.	20,000 R.P.M.
4:1 RATIO 4,600 R.P.M. 34587	— —	Replace with 34588 Assy.	Add 34586 Gear Assy. *	Replace with 34590 Assy. *	Replace with 34591 Assy. *	Replace with 34481 Assy.
7.43:1 RATIO 2,500 R.P.M. 34588	Replace with 34587 Assy.	— —	Replace with 34589 Assy. *	Add 34586 Gear Assy. *	Add 34585 Gear Assy. *	Replace with 34481 Assy.
16:1 RATIO 1,200 R.P.M. 34589	Remove 34586 Gear Assy. **	Replace with 34588 Assy. **	— —	Replace 34587 with 34588	Replace with 34591 Assy.	Replace with 34481 Assy. *
29.7:1 RATIO 650 R.P.M. 34590	Replace with 34587 Assy. **	Remove 34586 Gear Assy. **	Replace 34588 with 34587	— —	Replace 34586 with 34585	Replace with 34481 Assy. **
55.2:1 RATIO 350 R.P.M. 34591	Replace with 34587 Assy. **	Remove 34585 Gear Assy. **	Replace with 34589 Assy.	Replace 34585 with 34586	— —	Replace with 34481 Assy. **
DIRECT DRIVE 20,000 R.P.M. 34481	Replace with 34587 Assy.	Replace with 34588 Assy.	Replace with 34589 Assy. *	Replace with 34590 Assy. *	Replace with 34591 Assy. *	— —

* Requires 33768 Nose Housing on 2-inch and 4-inch stroke units and 34155 Nose Housing on 6-inch units.

** Requires 33908 Nose Housing on 2-inch and 4-inch stroke units and 34156 Nose Housing on 6-inch units.

Gear Conversion for Par-A-Matic Drills

To convert to a required speed, start with sub-assembly numbers in column at left and read across. All gearing is O-series, non-reversible, 3/8"-24 threaded spindle.

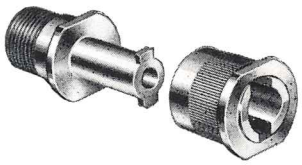
BASIC R.P.M. & GEAR RATIO	SUB-ASSY. NO.	17,000 R.P.M.	5,000 R.P.M.	2,800 R.P.M.	2,100 R.P.M.	1,450 R.P.M.	850 R.P.M.	500 R.P.M.
17,000 R.P.M. DIRECT DRIVE	33808	— —	Replace with 33835	Replace with 33836	Replace with * 31633 ** 31363 34009	Replace with 33853 & 33835	Replace with 33837 & 33835	Replace with 33837 & 33836
5,000 R.P.M. 34:1 RATIO	33835	Replace with 33808	— —	Replace with 33836	Replace with * 31633 ** 31363 34009	Replace with 33853	Replace with 33837	Replace with 33837 & 33836
2,800 R.P.M. 5.5:1 RATIO	33836	Replace with 33808	Replace with 33835	— —	Replace with * 31633 ** 31363 34009	Replace with 33853 & 33835	Replace with 33837 & 33835	Replace with 33837
2,100 R.P.M. 6.9:1 RATIO	34009	Replace with * 30745 ** 30741 33808	Replace with * 30745 ** 30741 33835	Replace with * 30745 ** 30741 33836	— —	Replace with * 30745 ** 30741 33853 33835	Replace with * 30745 ** 30741 33837 33835	Replace with * 30745 ** 30741 33837 33836
1,450 R.P.M. 11.5:1 RATIO	33853 33835	Replace with 33808	Remove 33853	Replace with 33836	Replace with * 31633 ** 31363 34009	— —	Remove 33853 Add 33837	Replace with 33837 & 33836
850 R.P.M. 18.7:1 RATIO	33837 33835	Replace with 33808	Remove 33837	Replace with 33836	Replace with * 31633 ** 31363 34009	Remove 33837 Add 33853	— —	Remove 33835 Add 33836
500 R.P.M. 30.25:1 RATIO	33837 33836	Replace with 33808	Replace with 33835	Remove 33837	Replace with * 31633 ** 31363 34009	Replace with 33853 & 33835	Remove 33836 Add 33835	— —

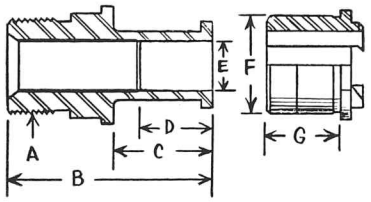
*Rotor **Blades Asterisks indicate that rotor and blades must be changed when converting to or from a 2,100 rpm speed.

BUSHING ADAPTERS FOR SELF-FEED DRILLS

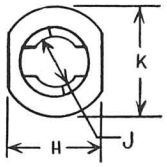
DRILL BUSHING AND LOCK BUSHING ADAPTERS

DRILL BUSHING ADAPTER





LOCK BUSHING ADAPTER

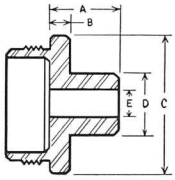


* Recommended diameter to be drilled in fixture plate for press fit.

Drill Bushing Adapter	A. Thread Size	B	C	D	E. All Dimensions +.0000 - .0003	Lock Bushing Adapter	F	G	H	J. All Dimensions +.001 - .000	K	Press Fit Dia* +.001 - .000
35214	3/4"-16 UNF-2A LH	2 5/64	1.012	1/2	.2046	35215	.686	3/4	11/16	.384	13/16	.687
35216	3/4"-16 UNF-2A LH	2 5/64	1.017	1/2	.2516	35217	.749	3/4	3/4	.437	7/8	.750
35218	3/4"-16 UNF-2A LH	2 5/64	1.021	1/2	.3141	35219	.811	3/4	13/16	.500	15/16	.812
35220	1"-14 NF-2A LH	2 7/64	1.038	3/4	.5017	35221	.999	3/4	1	.687	1 1/8	1.000
35222	1 1/4"-12 UNF-2A LH	2 7/64	1.329	1	.7518	35223	1.374	1	1 3/8	.937	1 1/2	1.375
35224	1 1/2"-12 UNF-2A LH	2 9/16	1.468	1	1.0018	35225	1.749	1 1/8	1 3/4	1.250	1 7/8	1.750

Types of Self-Feed Drills on which Adapters May Be Used

Drill Range	Adapter No.	Can Be Used on Drills Listed Below			Drill Range	Adapter No.	Can Be Used on Drills Listed Below		
.0550 - .0995	35214	Bant-A-Matic	Par-A-Matic	Automatic	.1562 - .3125	35220		Par-A-Matic	Automatic
.1015 - .1360	35216	Bant-A-Matic	Par-A-Matic	Automatic	.3125 - .5000	35222			Automatic
.1285 - .1875	35218	Bant-A-Matic	Par-A-Matic	Automatic	.5000 - .7500	35224			Automatic



FOR AUTOMATIC DRILLS ONLY

LINER BUSHING ADAPTERS

*All dimensions +.0000 - .0003

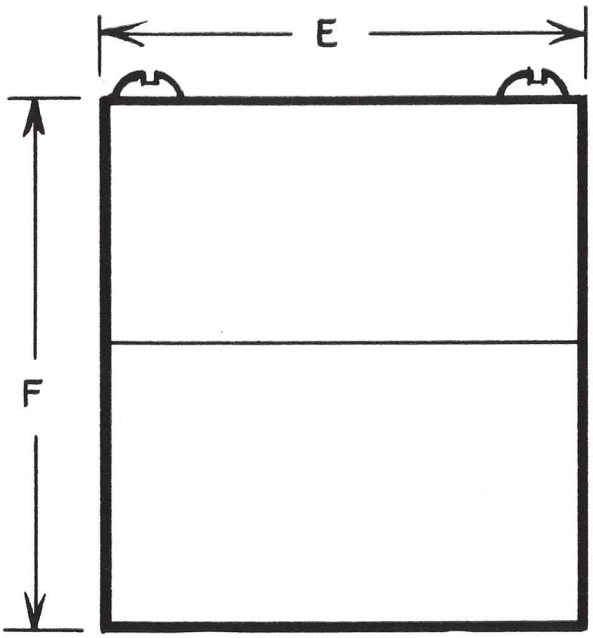
No.	Drill Range	A	B	C	D	E *
34922	.0550 - .0995	1.380	1.000	2 3/4	1.248	.2046
34923	.1015 - .1360	1.380	1.000	2 3/4	1.248	.2516
34924	.1285 - .1875	1.380	1.000	2 3/4	1.248	.3141
34926	.1562 - .3125	1.380	1.000	2 3/4	1.248	.5017
34927	.3125 - .5000	1.380	1.000	2 3/4	1.248	.7518
34929	.5000 - .7500	1.380	1.000	2 3/4	1.248	1.0018

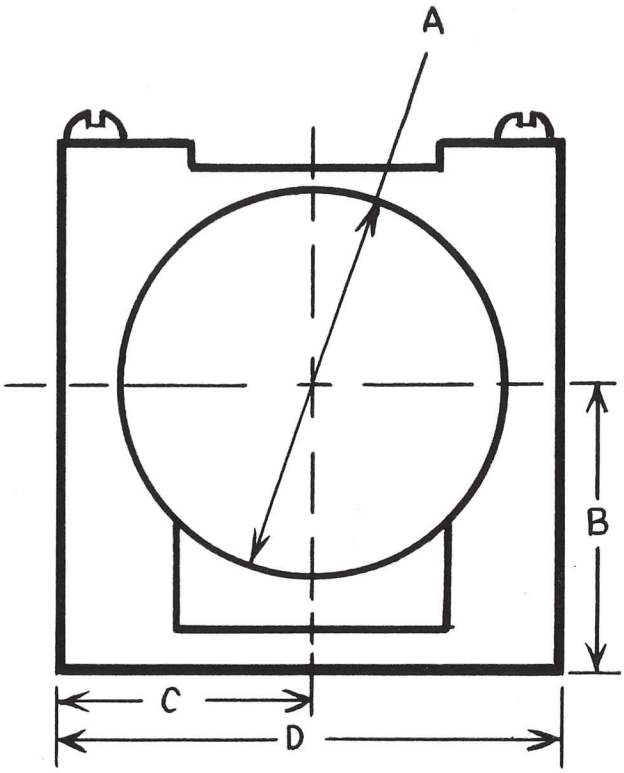
HOW TO ORDER. Determine size of hole to be drilled. Refer to table below and find equivalent decimal size. Then order Drill Bushing Adapter or Liner Bushing Adapter with proper drill range. For portable applications, order one Drill Bushing Adapter for each Self-Feed Drill and as many Lock Bushing Adapters as may be needed in the fixture plate.

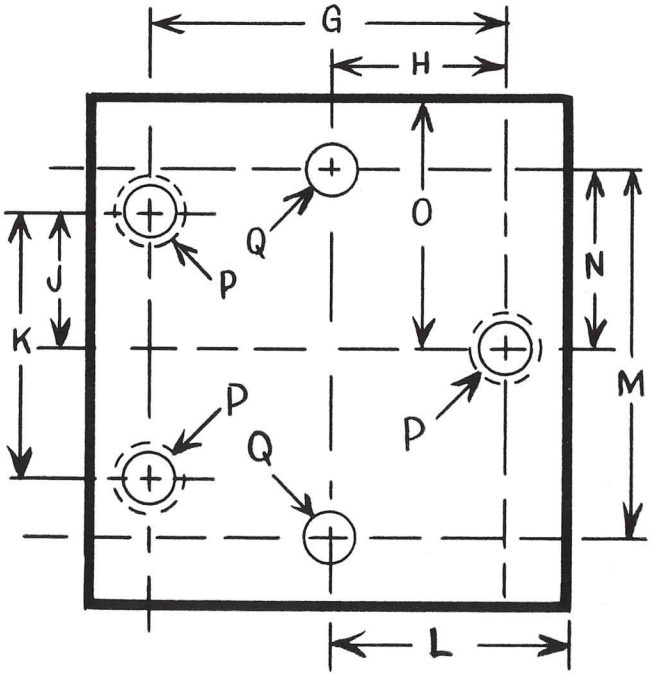
Accessories listed on this page require the use of liner bushings, to be pressed into dimension "E". We do not carry liner bushings in stock, and we recommend that they be purchased through your local distributor. However, we can furnish liner bushings on special order, when requested, and will deliver A.S.A. Standard Headless Press-Fit Drill Bushings. Prices on application.

Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Drill Size
.0550	54	.0935	42	.1250	1/8	.1660	19	.2010	7	.2500	1/4	.3160	O	.3970	X	.5781	37/64
.0595	53	.0937	3/32	.1285	30	.1695	18	.2031	13/64	.2570	F	.3230	P	.4040	Y	.5937	19/32
.0625	1/16	.0960	41	.1360	29	.1719	11/64	.2040	6	.2610	G	.3281	21/64	.4062	13/32	.6094	39/64
.0635	52	.0980	40	.1405	28	.1730	17	.2055	5	.2656	17/64	.3320	Q	.4130	Z	.6250	5/8
.0670	51	.0995	39	.1406	9/64	.1770	16	.2090	4	.2660	H	.3390	R	.4219	27/64	.6406	41/64
.0700	50	.1015	38	.1440	27	.1800	15	.2130	3	.2720	I	.3437	11/32	.4375	7/16	.6562	21/32
.0730	49	.1040	37	.1470	26	.1820	14	.2187	7/32	.2770	J	.3480	S	.4531	29/64	.6719	43/64
.0760	48	.1065	36	.1495	25	.1850	13	.2210	2	.2810	K	.3580	T	.4687	15/32	.6875	11/16
.0781	5/64	.1093	7/64	.1520	24	.1875	3/16	.2280	I	.2812	9/32	.3594	23/64	.4844	31/64	.7031	45/64
.0785	47	.1100	35	.1540	23	.1890	12	.2340	A	.2900	L	.3680	U	.5000	1/2	.7187	23/32
.0810	46	.1110	34	.1562	5/32	.1910	11	.2344	15/64	.2950	M	.3750	3/8	.5156	33/64	.7344	47/64
.0820	45	.1130	33	.1570	22	.1935	10	.2380	B	.2968	19/64	.3770	V	.5312	17/32	.7500	3/4
.0860	44	.1160	32	.1590	21	.1960	9	.2420	C	.3020	N	3860	W	.5469	35/64		
.0890	43	.1200	31	.1610	20	.1990	8	.2460	D	.3125	5/16	.3906	25/64	.5625	9/16		

35283 MOUNTING CLAMP FOR PAR-A-MATICS AND TAP-A-MATICS





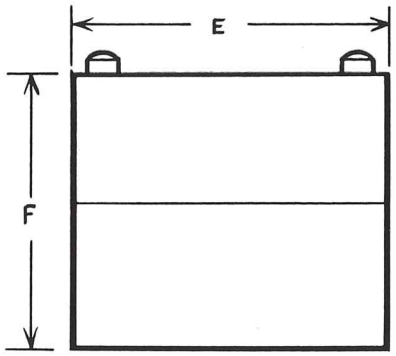


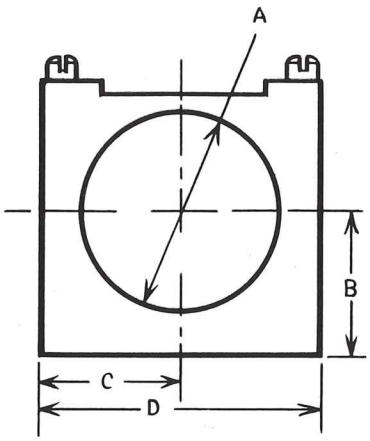
A	1.998	J	11/16
B	1 1/2	K	1 3/8
C	1 5/16	L	1 1/4
D	2 5/8	M	1 7/8
E	2 1/2	N	15/16
F	2 3/4	O	1 5/16
G	1 7/8	P	9/32 dia.
H	15/16	Q	5/16-18 UNC-2B

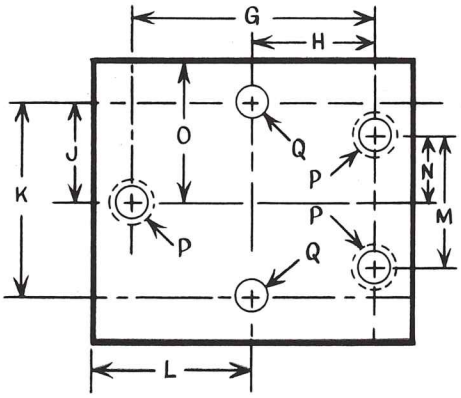
Technical Data on Page 2

MOUNTING CLAMP DIMENSIONS

36042 MOUNTING CLAMP FOR BANT-A-MATIC DRILLS

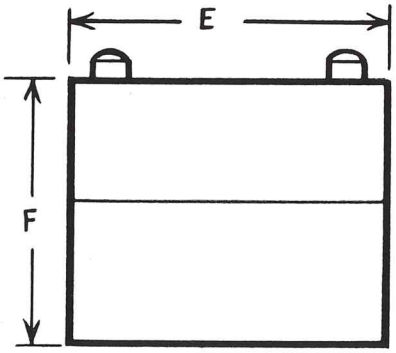


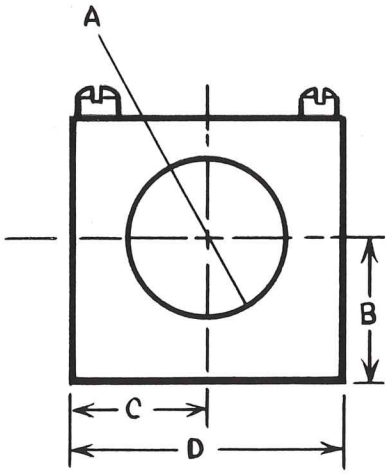


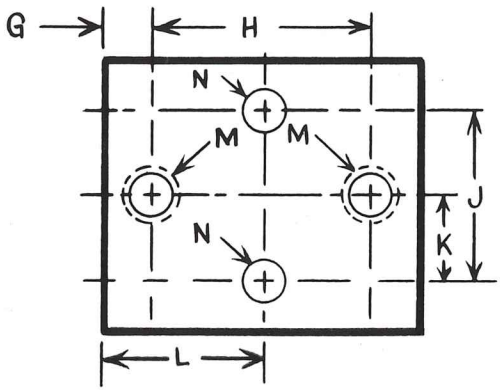


A	1.498	F	2 5/32	L	1 1/4
B	1 5/32	G	1 7/8	M	1.0
C	1.093	H	15/16	N	1/2
D	2 3/16	J	3/4	O	1 3/32
E	2 1/2	K	1 1/2	P	17/64 dia.
Technical data on page 2				Q	5/16-18 UNC-2B

36659 MOUNTING CLAMP FOR MIDG-A-MATIC DRILLS



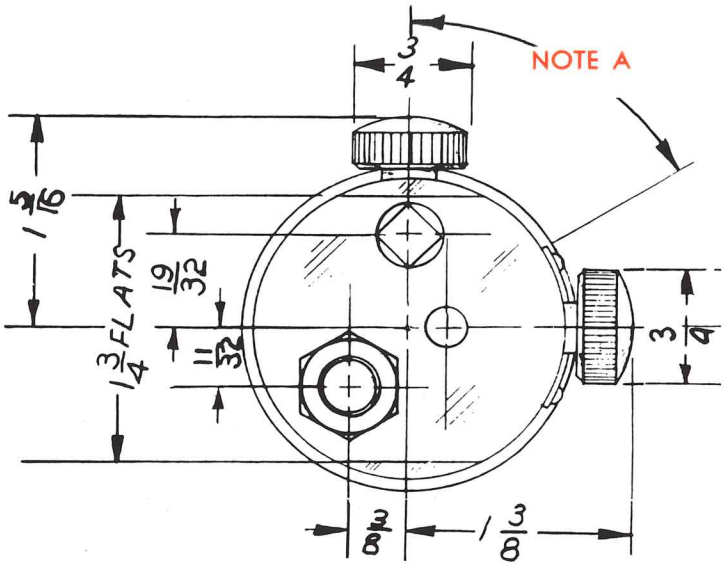




A	.998	E	2	J	1.0
B	29/32	F	1 21/32	K	1/2
C	27/32	G	5/16	L	1.0
D	1 1/16	H	1 3/8	M	17/64 dia.
Technical data on page 3				N	1/4-20 UNC-2B

PAR-A-MATIC DRILL STANDARD VALVE HEAD

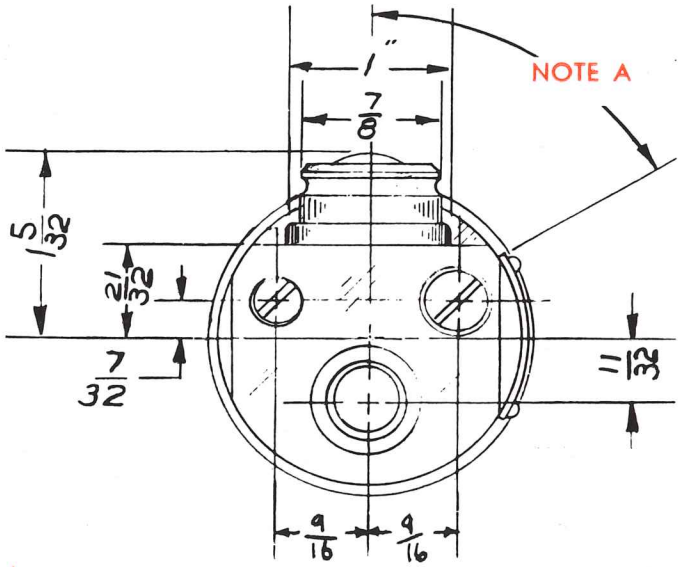
See Pages 1, 12, 13, 14, 15.

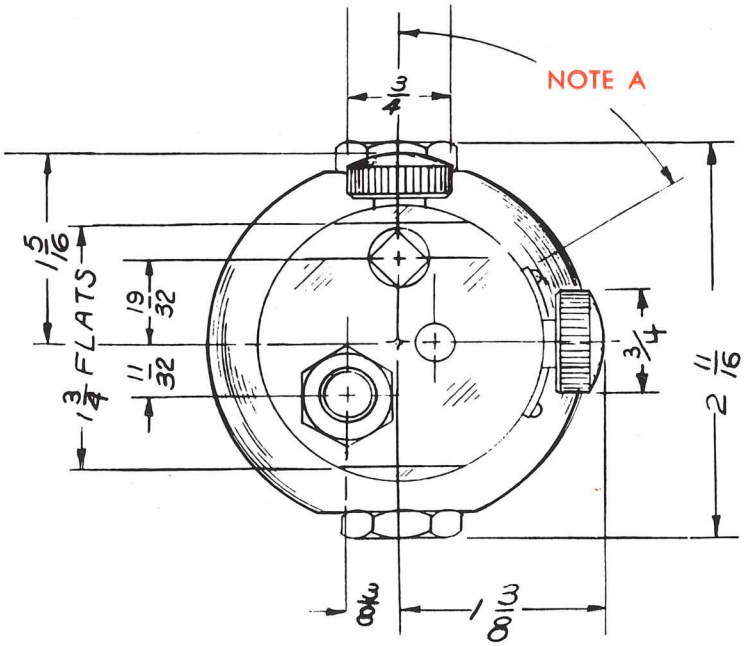


NOTE A: RADIAL LOCATION OF PROJECTION NOT IN ANY GIVEN LOCATION WITH RESPECT TO NAME PLATE.

PAR-A-MATIC DRILL REMOTE-CONTROL VALVE HEAD

See Pages 1, 12, 13, 14, 15.





Tap-A-Matic Tappers — Standard Valve Head and Tapping Head

See Pages 1 and 16.

Aro Tap-A-Matic Tappers are furnished only with a Standard Head as shown at left. This is the only type of head which will allow the motor to be retracted in rotation, as is necessary when tapping. Separate air inlets are provided to the motor and piston, and the selector valve is set in the No. 2 position to give regulated thrust and retraction with motor running. Dimension of 2 1/16 indicates largest measurement on tapping head at opposite end of tool.

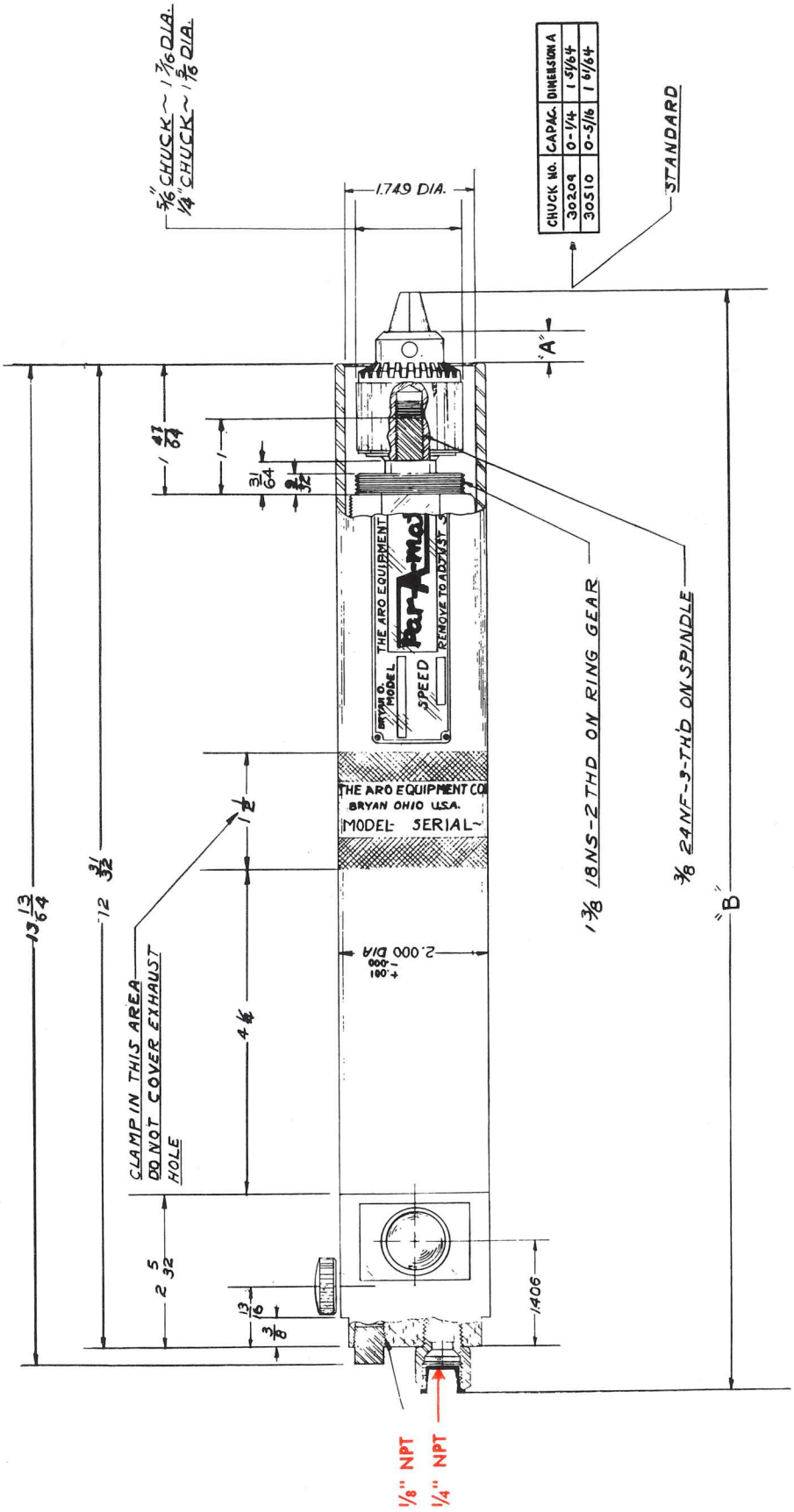
DIMENSIONS — PAR-A-MATIC DRILLS

SINGLE-REDUCTION PAR-A-MATICS WITH STANDARD HEAD

APPLIES TO MODELS HAVING SPEEDS OF

17,000 RPM
5,000 RPM
2,800 RPM
2,100 RPM

VALVE HEAD DIMENSIONS ON PAGE 10. TECHNICAL DATA ON PAGE 1.



CHUCK NO.	CAPAC.	DIMENSION A
30209	0-1/4	1 51/64
30510	0-5/16	1 61/64

CHUCK SIZE	DIM B	
	JAWS OPEN	JAWS CLOSED
1/4	14 3/32	14 9/16
5/16	14-1/4	14 3/4

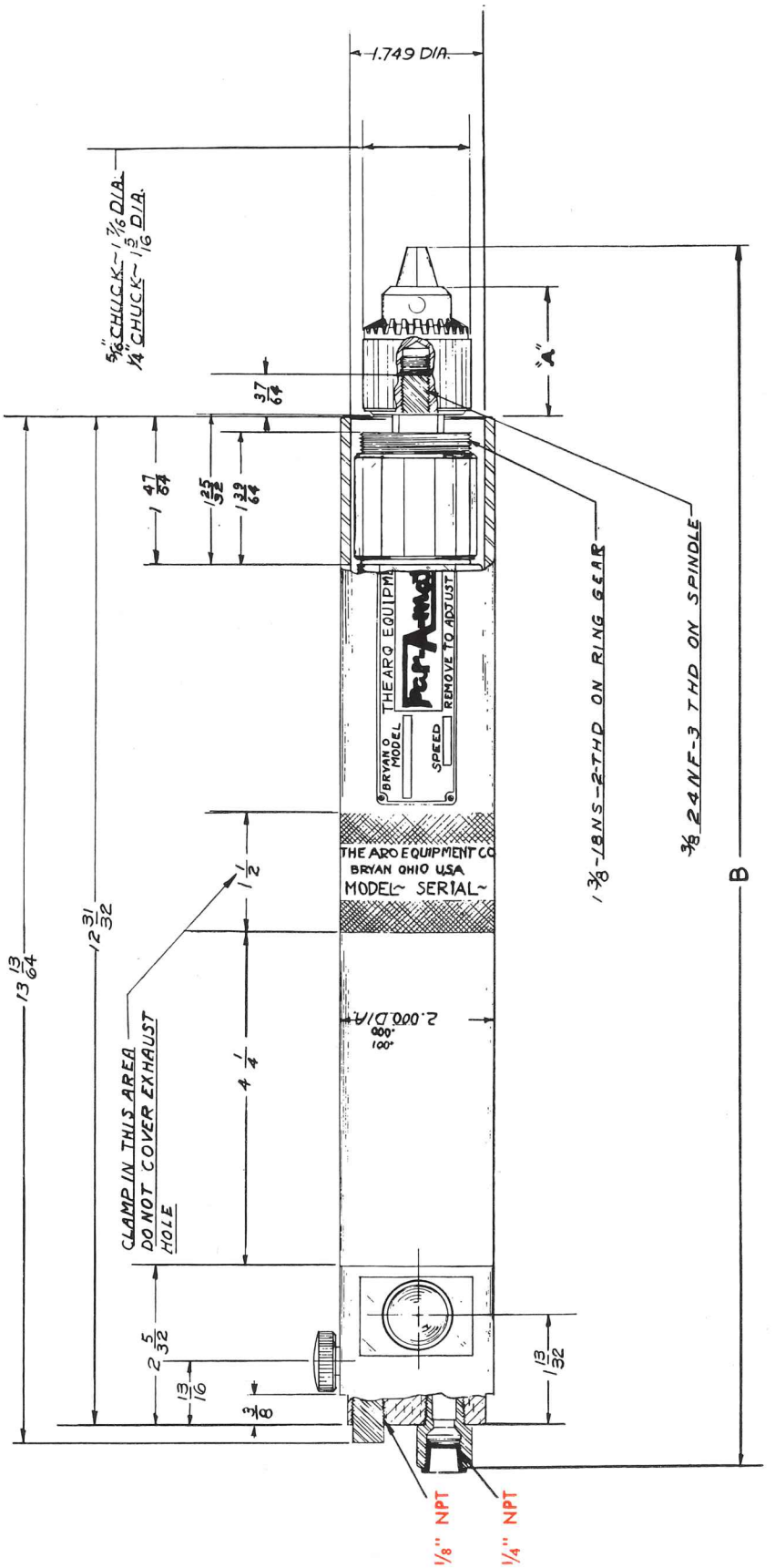
DOUBLE-REDUCTION PAR-A-MATICS WITH STANDARD HEAD

APPLIES TO MODELS HAVING

1,450 RPM
850 RPM
500 RPM

VALVE HEAD DIMENSIONS ON PAGE 10.

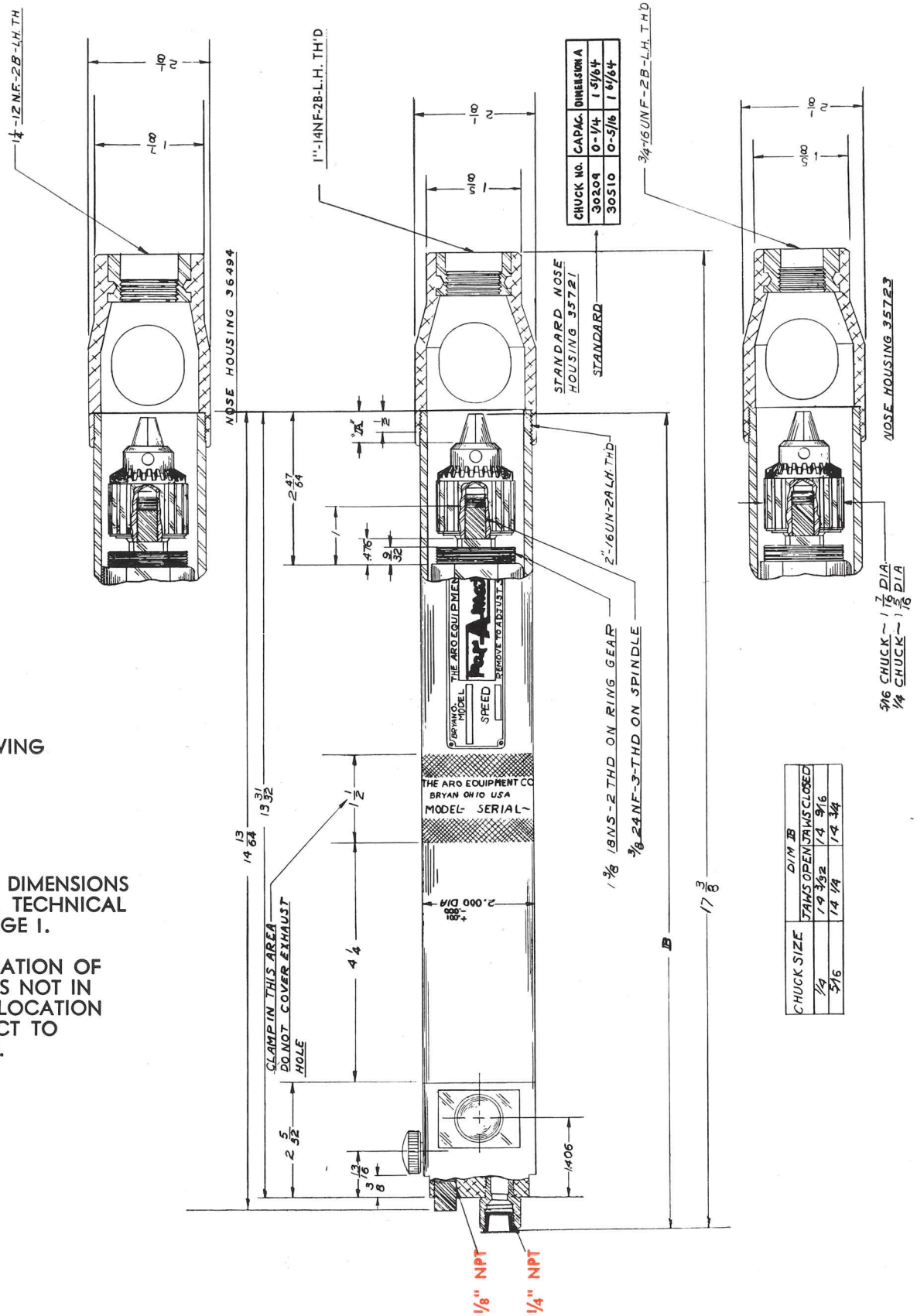
TECHNICAL DATA ON PAGE 1.



CHUCK SIZE	DIM. B JAWS OPEN	JAWS CLOSED
1/4	15 13/32	15 7/8
5/16	15 9/16	16 1/16

DIMENSIONS — PAR-A-MATIC DRILLS

PORTABLE PAR-A-MATICS WITH SINGLE-REDUCTION GEARING



CHUCK NO.	CAPAC.	DIMENSION A
30209	0-1/4	1 5/64
30510	0-5/16	1 61/64

CHUCK SIZE	DIM B JAWS OPEN	DIM B JAWS CLOSED
1/4	1 9 3/32	1 4 9/16
5/16	1 4 1/4	1 4 3/4

APPLIES TO MODELS HAVING

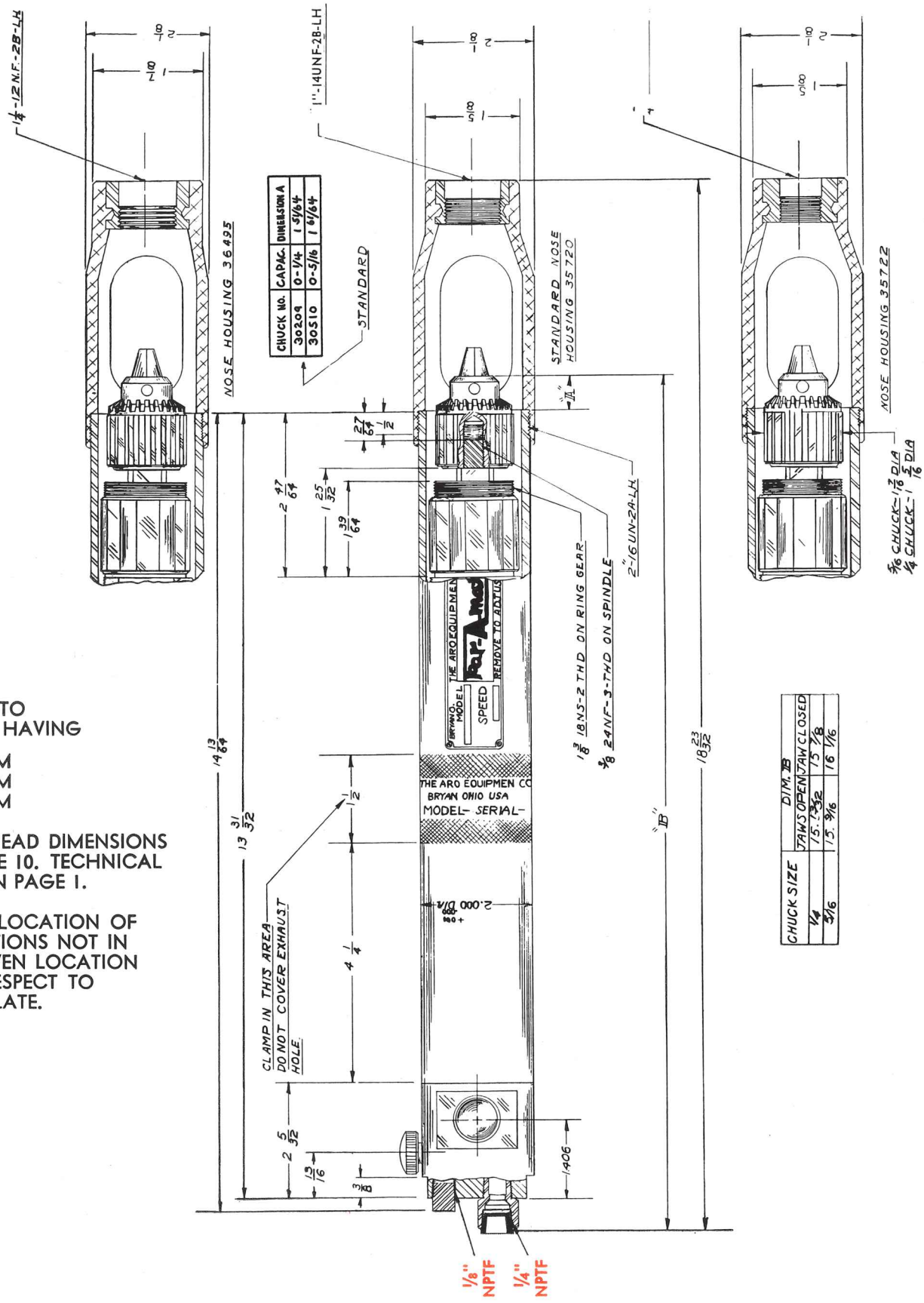
17,000 RPM
5,000 RPM
2,800 RPM
2,100 RPM

VALVE HEAD DIMENSIONS ON PAGE 10. TECHNICAL DATA ON PAGE 1.

RADIAL LOCATION OF PROJECTIONS NOT IN ANY GIVEN LOCATION WITH RESPECT TO NAME PLATE.

ARO

PORTABLE PAR-A-MATICS WITH DOUBLE-REDUCTION GEARING



APPLIES TO MODELS HAVING

1,450 RPM
850 RPM
500 RPM

VALVE HEAD DIMENSIONS ON PAGE 10. TECHNICAL DATA ON PAGE 1.

RADIAL LOCATION OF PROJECTIONS NOT IN ANY GIVEN LOCATION WITH RESPECT TO NAME PLATE.

DIMENSIONS — TAP-A-MATIC TAPPERS

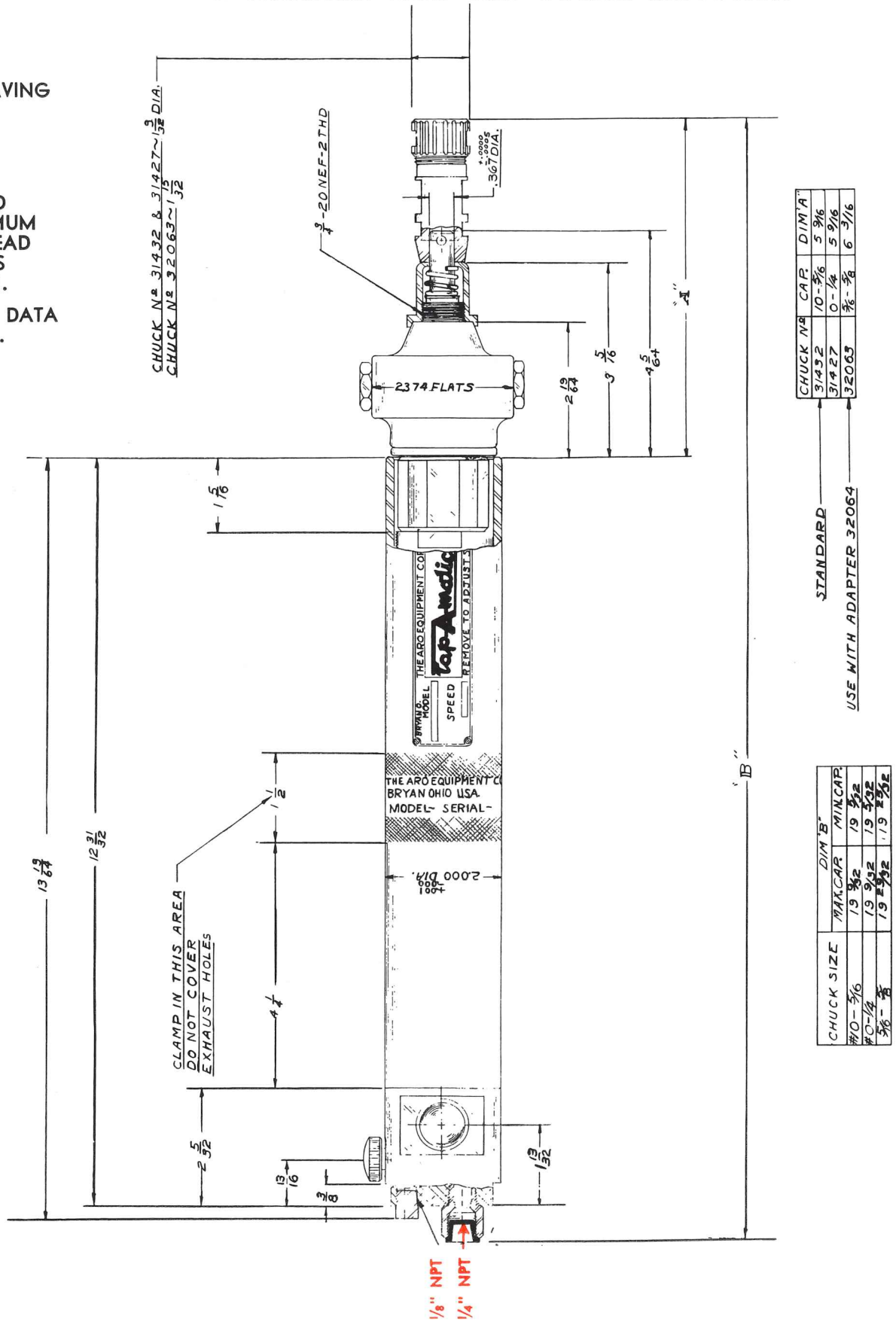
TAP-A-MATICS WITH STANDARD HEAD AND DOUBLE REDUCTION

APPLIES TO MODELS HAVING

1,450 RPM
850 RPM
500 RPM

VALVE HEAD AND MAXIMUM TAPPING HEAD DIMENSIONS ON PAGE 11.

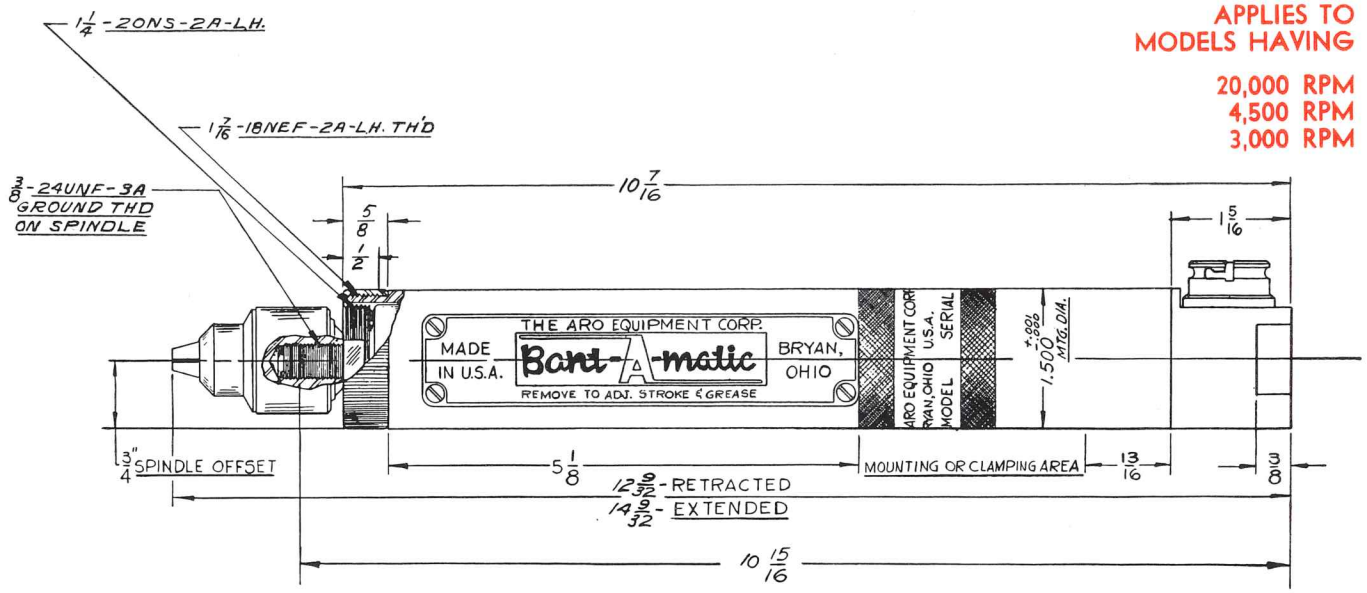
TECHNICAL DATA ON PAGE 1.



CHUCK Nº	CAP.	DIM "A"
31432	10 - 3/16	5 9/16
31427	0 - 1/4	5 9/16
32063	3/16 - 5/8	6 3/16

CHUCK SIZE	DIM "B" MAX. CAP.	DIM "B" MIN. CAP.
#10 - 3/16	13 3/32	13 3/32
#0 - 1/4	13 9/32	13 5/32
3/16 - 5/8	13 11/32	13 2 5/32

STANDARD BANT-A-MATIC WITH SINGLE-REDUCTION GEARING



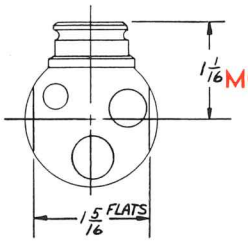
APPLIES TO MODELS HAVING

20,000 RPM
4,500 RPM
3,000 RPM

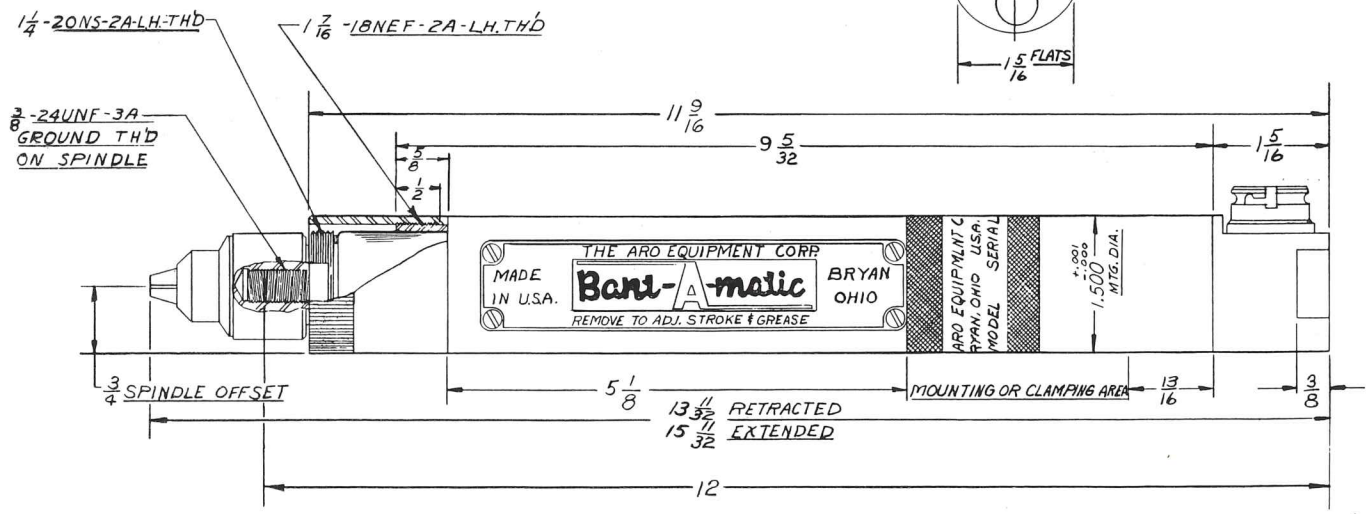
TECHNICAL DATA ON PAGE 3

STANDARD BANT-A-MATIC WITH DOUBLE-REDUCTION GEARING

RADIAL LOCATION OF PROJECTIONS NOT IN ANY GIVEN LOCATION WITH RESPECT TO NAME PLATE.



APPLIES TO MODEL HAVING 800 RPM

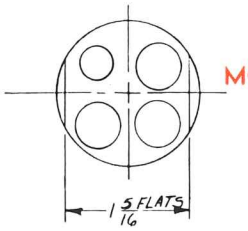


TECHNICAL DATA ON PAGE 3

DIMENSIONS — BANT-A-MATIC DRILLS

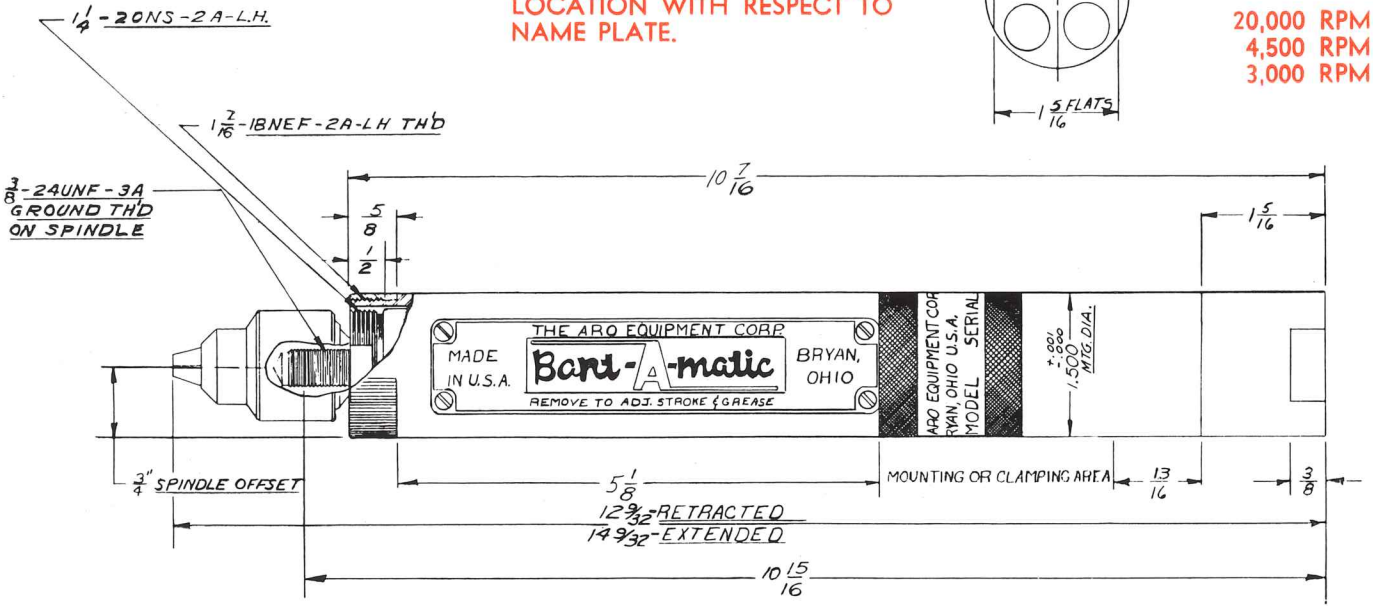
THRU-HEAD BANT-A-MATIC WITH SINGLE-REDUCTION GEARING

RADIAL LOCATION OF PROJECTIONS NOT IN ANY GIVEN LOCATION WITH RESPECT TO NAME PLATE.



APPLIES TO MODELS HAVING

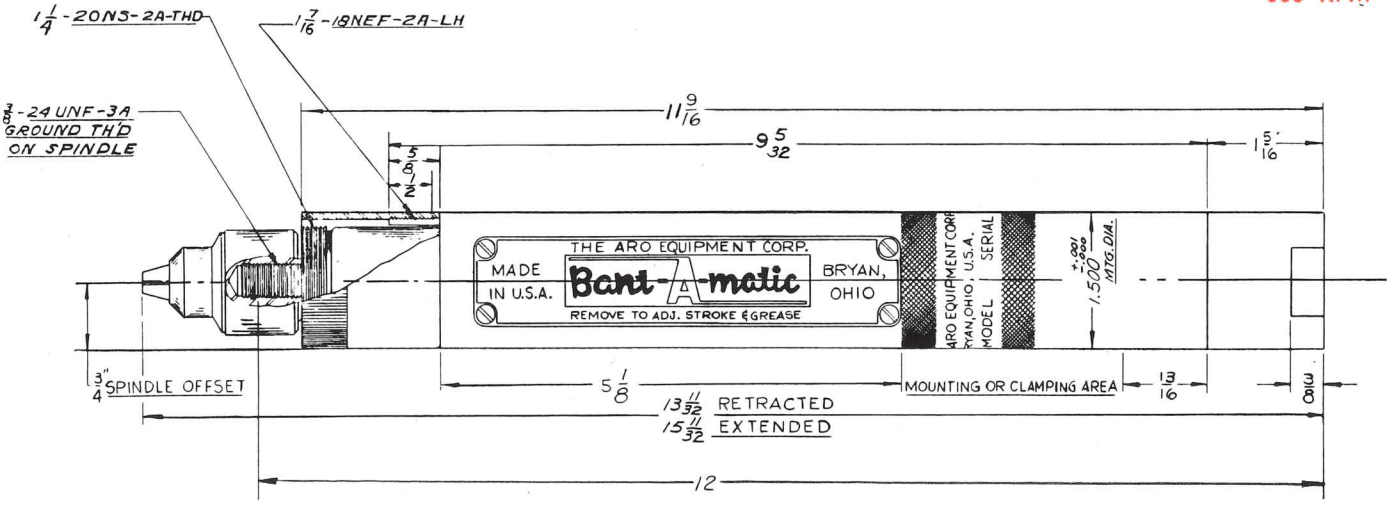
20,000 RPM
4,500 RPM
3,000 RPM



TECHNICAL DATA ON PAGE 3

THRU-HEAD BANT-A-MATIC WITH DOUBLE-REDUCTION GEARING

APPLIES TO MODEL HAVING 800 RPM



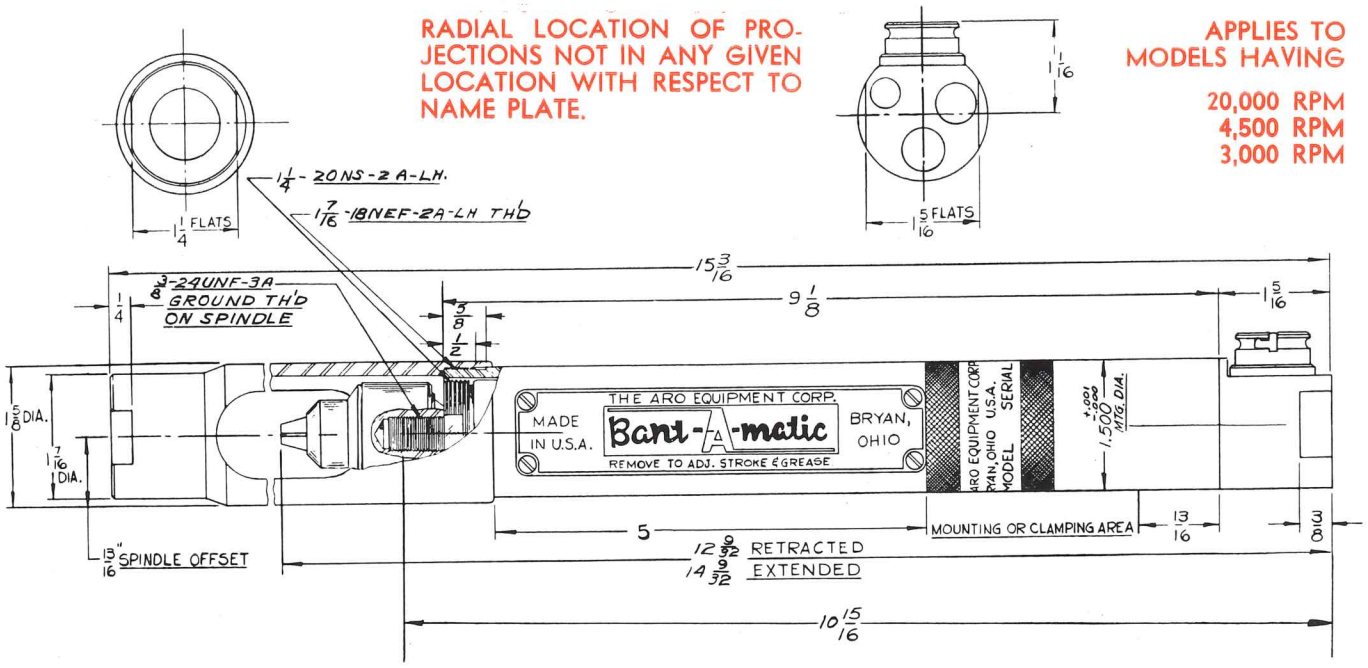
TECHNICAL DATA ON PAGE 3

PORTABLE BANT-A-MATIC WITH SINGLE-REDUCTION GEARING

RADIAL LOCATION OF PROJECTIONS NOT IN ANY GIVEN LOCATION WITH RESPECT TO NAME PLATE.

APPLIES TO MODELS HAVING

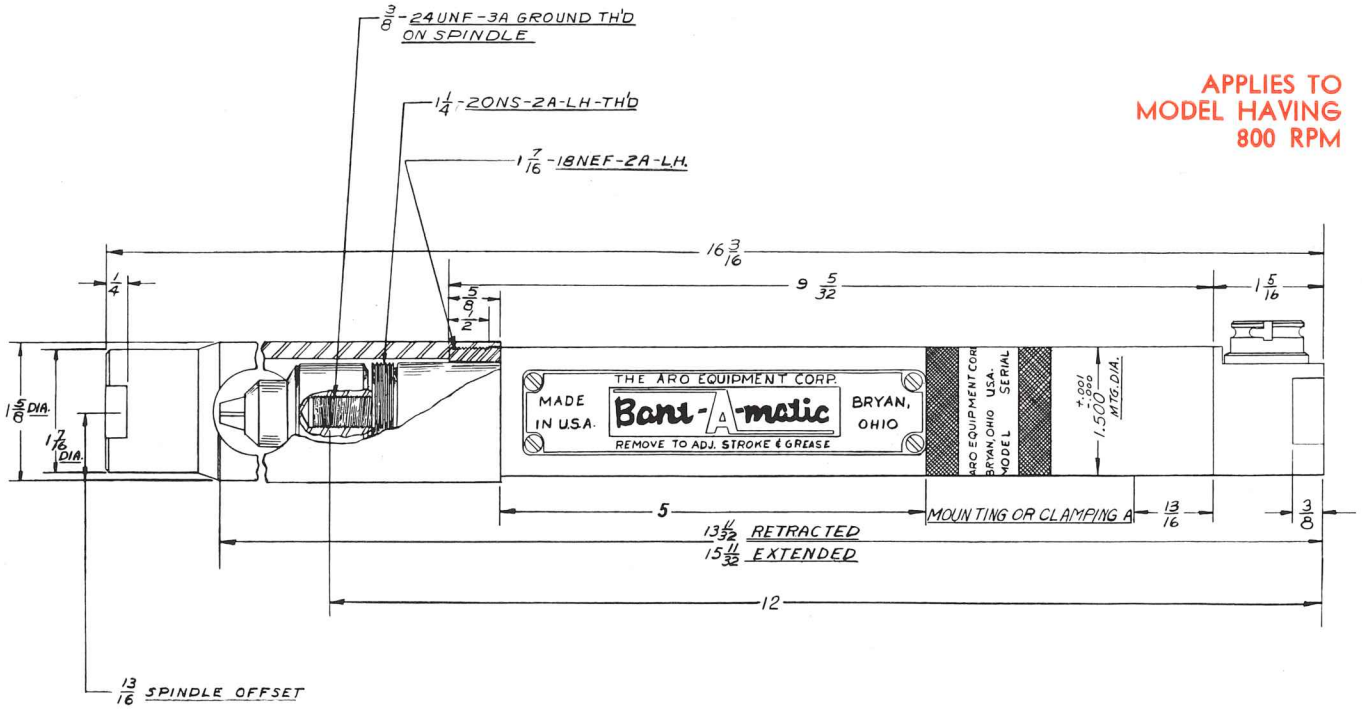
20,000 RPM
4,500 RPM
3,000 RPM



TECHNICAL DATA ON PAGE 3

PORTABLE BANT-A-MATIC WITH DOUBLE-REDUCTION GEARING

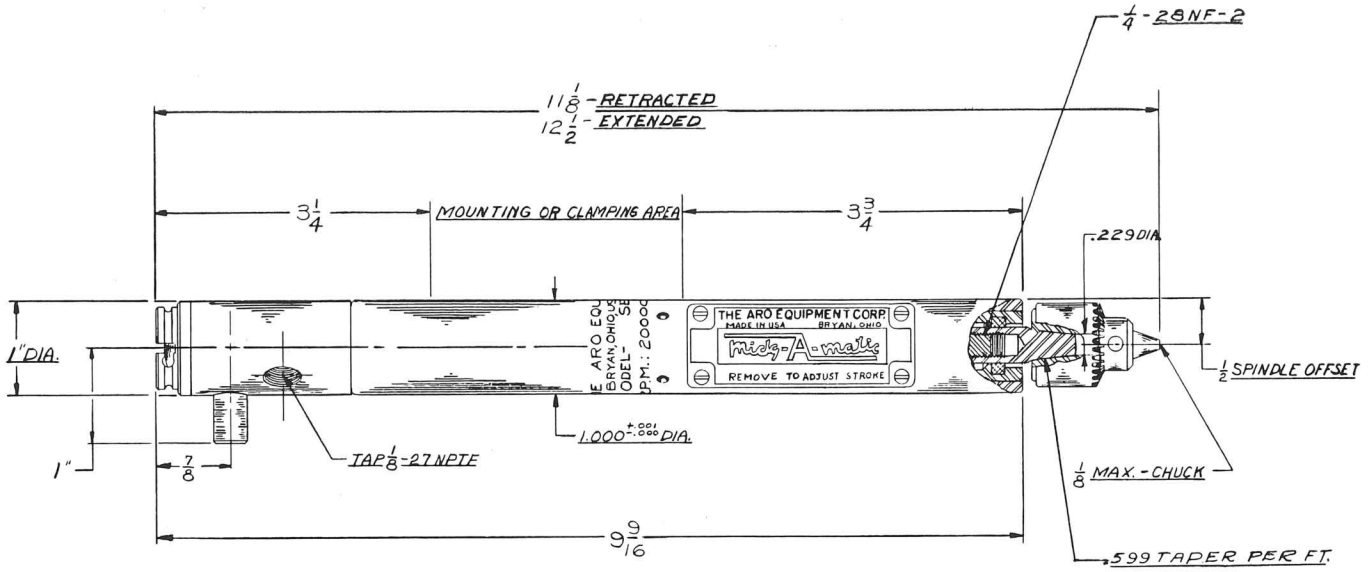
APPLIES TO MODEL HAVING 800 RPM



TECHNICAL DATA ON PAGE 3

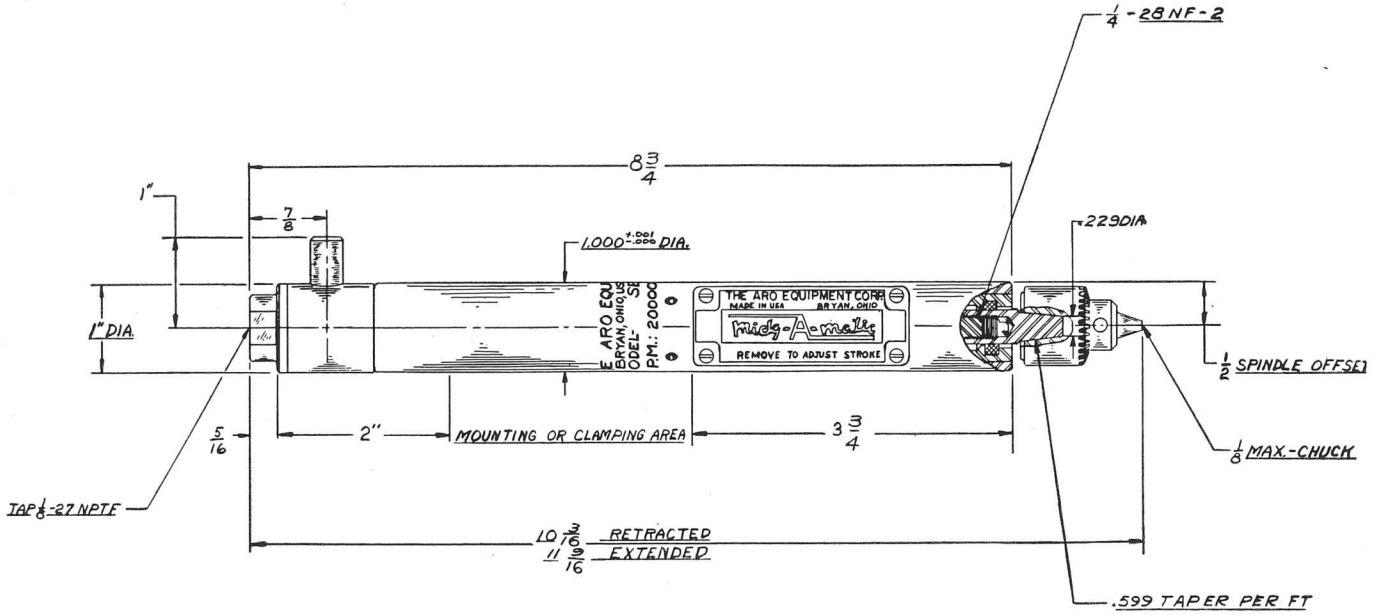
MODEL M-200 STANDARD MIDG-A-MATIC DRILL

TECHNICAL DATA ON PAGE 3

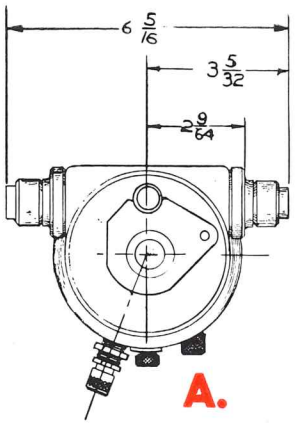


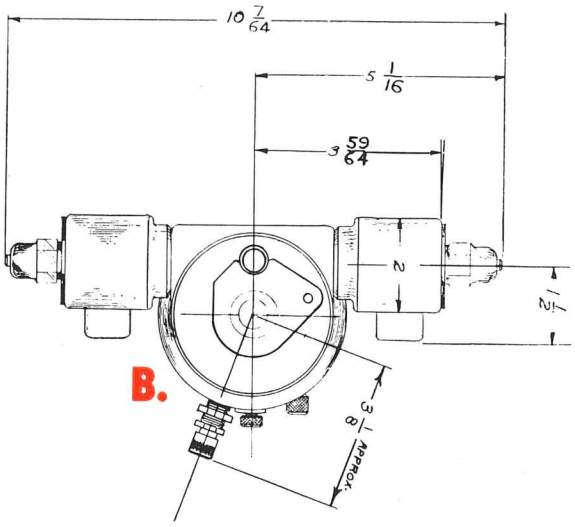
MODEL MR-200 THRU-HEAD MIDG-A-MATIC DRILL

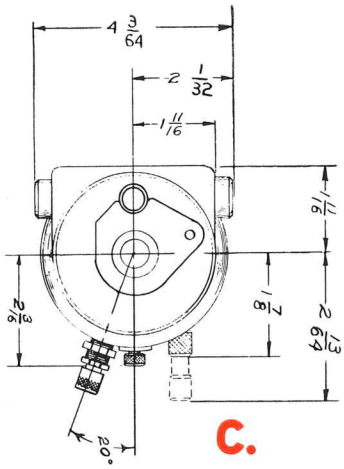
TECHNICAL DATA ON PAGE 3



VALVE HEAD ASSEMBLY FOR *ALL* AUTOMATIC DRILLS







A. End view of Valve Head without attachments, and with Hydraulic Feed Control shown at minimum and maximum positions (1⅞ & 2 13/64 dimension).

B. End View of Valve Head with No. 35050 Solenoids attached to Start Valve and Stop Valve (10 7/64 dimension).

C. End view of Valve Head with No. 35036 Air Pistons attached to Start Valve and Stop Valve (6 5/16 dimension).

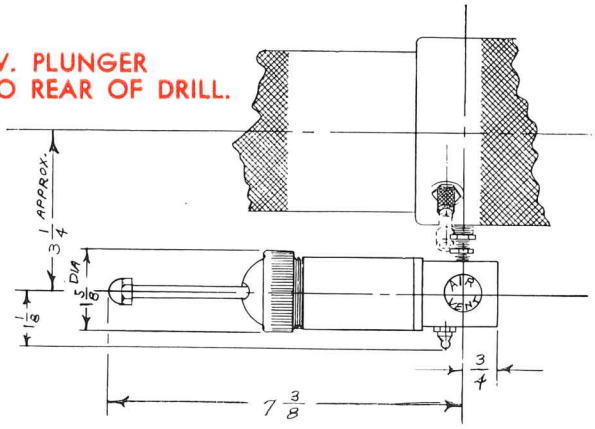
Radial locations of various projections on Automatic Drills are not constant.

NO. 36900 AUXILIARY FLUID RESERVOIR

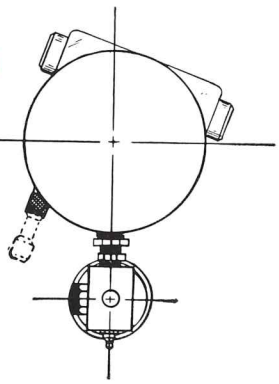
The Auxiliary Fluid Reservoir is installed parallel to the axis of the drill, and replaces the loader fitting shown in three views above. In illustration below, the plunger is shown pulled out to maximum distance with reservoir fully loaded. Dimension of 7⅜ will slowly diminish as fluid is supplied to drill.

Technical data given on pages 4 and 5. Full-length dimension views of Automatic Drills given on pages 22 through 27.

SIDE VIEW. PLUNGER POINTS TO REAR OF DRILL.

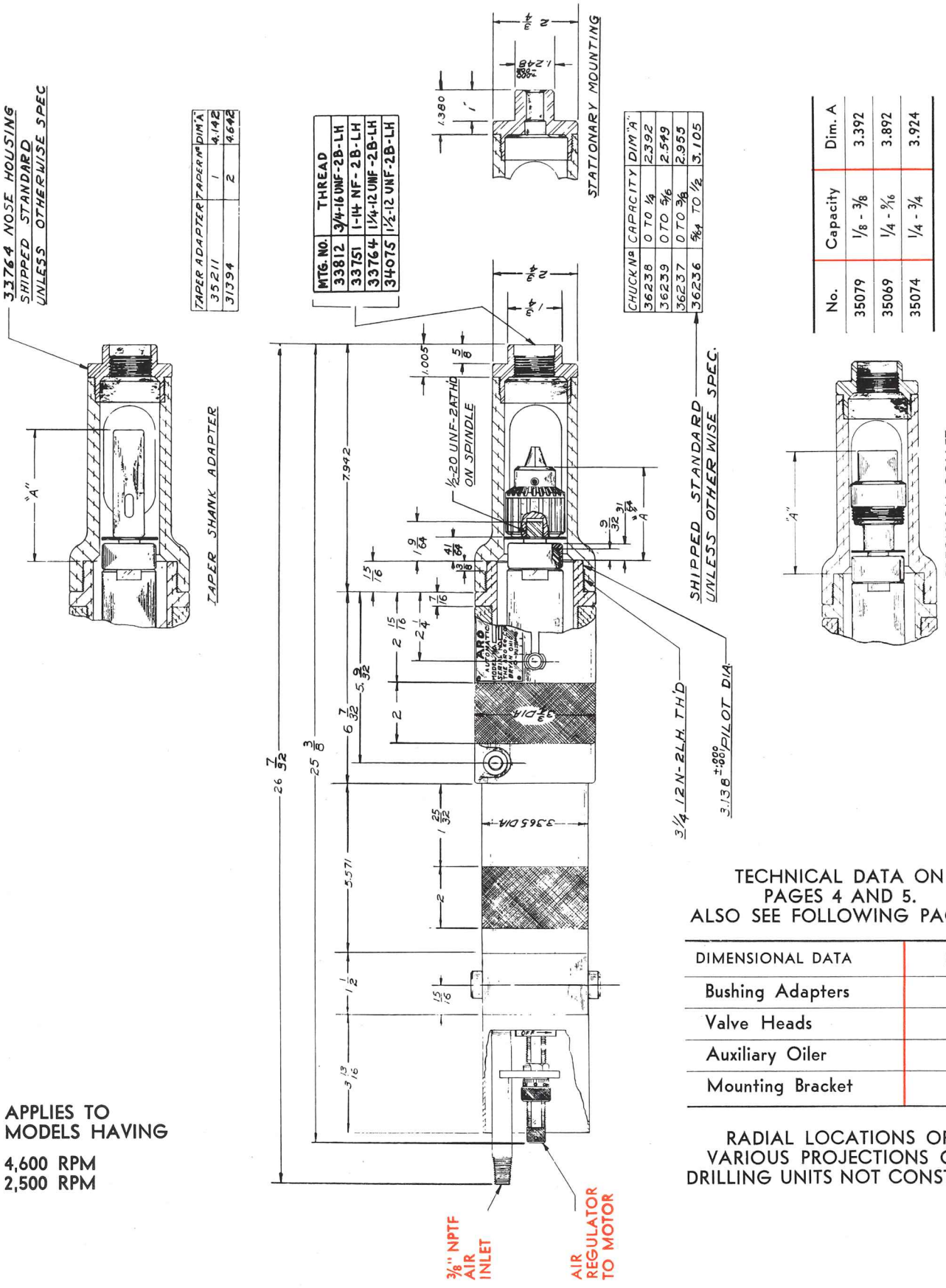


VIEW FROM FRONT OF DRILL.



DIMENSIONS — AUTOMATIC DRILLS

2" STROKE AUTOMATICS WITH SINGLE-REDUCTION GEARING



APPLIES TO MODELS HAVING

4,600 RPM
2,500 RPM

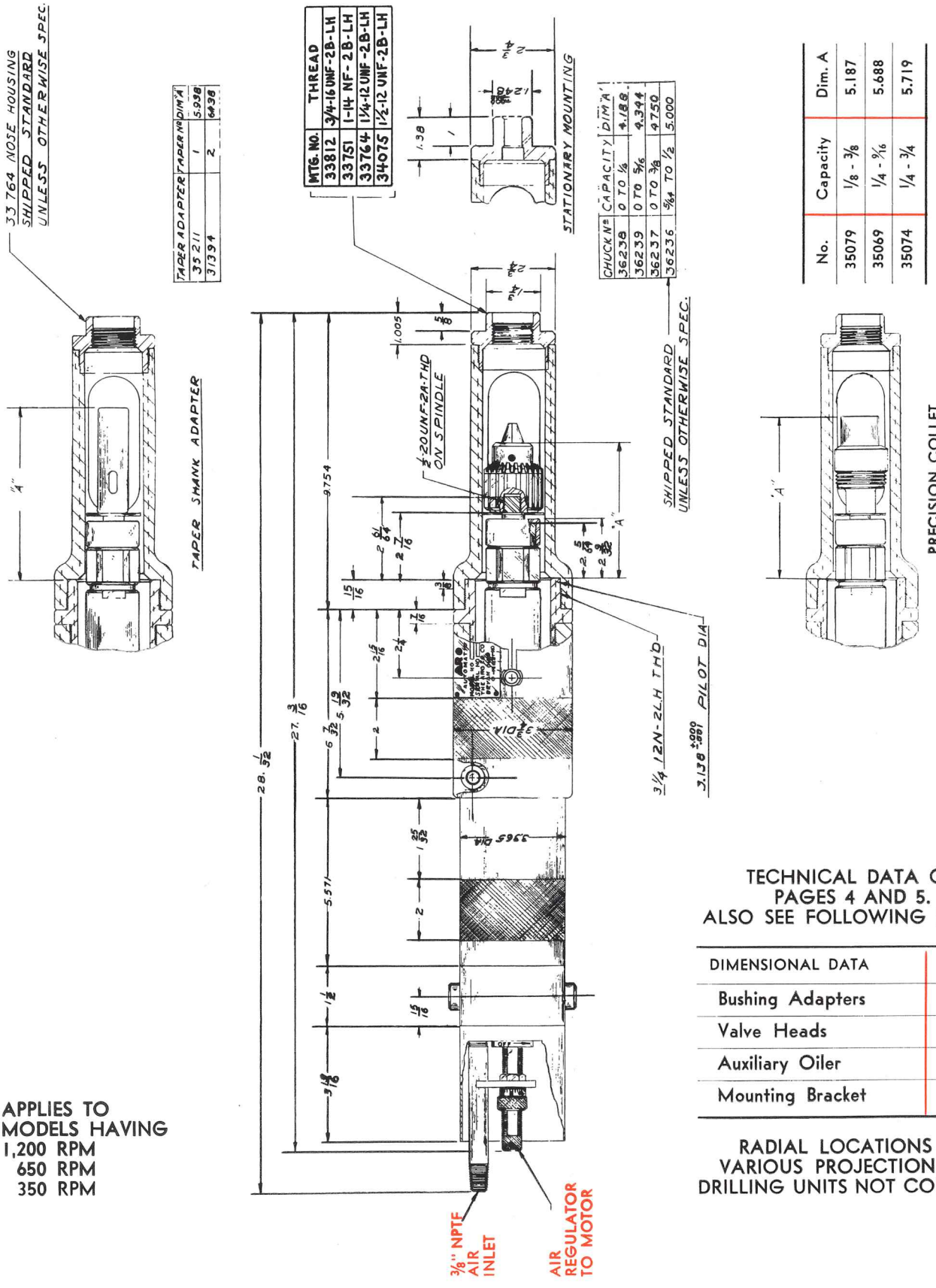
TECHNICAL DATA ON PAGES 4 AND 5.
ALSO SEE FOLLOWING PAGES:

DIMENSIONAL DATA	PAGE
Bushing Adapters	8
Valve Heads	21
Auxiliary Oiler	21
Mounting Bracket	28

RADIAL LOCATIONS OF VARIOUS PROJECTIONS ON DRILLING UNITS NOT CONSTANT

ARO

2" STROKE AUTOMATICS WITH DOUBLE-REDUCTION GEARING


33764 NOSE HOUSING
SHIPPED STANDARD
UNLESS OTHERWISE SPEC.
TAPER ADAPTER | TAPER NO | DIM "A"
35211 | 1 | 5.938
31394 | 2 | 6.438
TAPER SHANK ADAPTER
MTG. NO. | THREAD
33812 | 3/4-16 UNF-2B-LH
33751 | 1-14 NF-2B-LH
33764 | 1 1/4-12 UNF-2B-LH
34075 | 1 1/2-12 UNF-2B-LH
STATIONARY MOUNTING
CHUCK No. | CAPACITY | DIM "A"
36238 | 0 TO 1/8 | 4.188
36239 | 0 TO 5/16 | 4.344
36237 | 0 TO 3/8 | 4.750
36236 | 5/16 TO 1/2 | 5.000
SHIPPED STANDARD
UNLESS OTHERWISE SPEC.
No. | Capacity | Dim. A
35079 | 1/8 - 3/8 | 5.187
35069 | 1/4 - 5/16 | 5.688
35074 | 1/4 - 3/4 | 5.719
PRECISION COLLET
2"-20 UNF-2A-THD ON SPINDLE
3/4-12N-2LH THD
3.138 +.000 -.001 PILOT DIA
3/8" NPTF AIR INLET
AIR REGULATOR TO MOTOR

APPLIES TO
MODELS HAVING
1,200 RPM
650 RPM
350 RPM

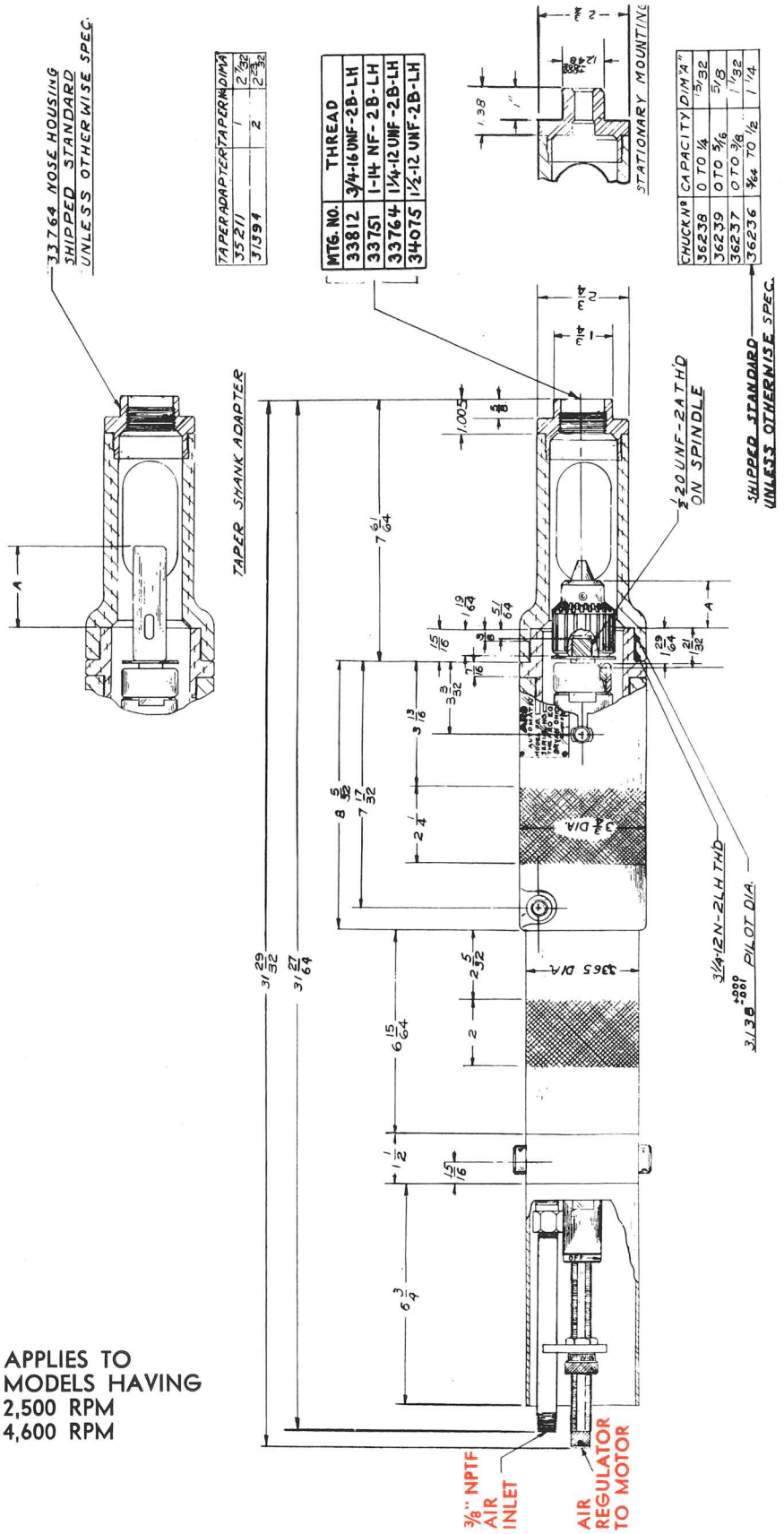
TECHNICAL DATA ON
PAGES 4 AND 5.
ALSO SEE FOLLOWING PAGES:

DIMENSIONAL DATA	PAGE
Bushing Adapters	8
Valve Heads	21
Auxiliary Oiler	21
Mounting Bracket	28

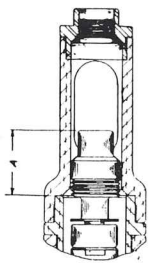
RADIAL LOCATIONS OF
VARIOUS PROJECTIONS ON
DRILLING UNITS NOT CONSTANT

DIMENSIONS – AUTOMATIC DRILLS

4" STROKE AUTOMATICS WITH SINGLE-REDUCTION GEARING


33764 NOSE HOUSING SHIPPED STANDARD UNLESS OTHERWISE SPEC.
TAPER ADAPTER
TAPER SHANK ADAPTER
MTG. NO. | THREAD
33812 | 3/4-16 UNF-2B-LH
33751 | 1-14 NF- 2B-LH
33764 | 1¼-12 UNF -2B-LH
34075 | 1½-12 UNF-2B-LH
STATIONARY MOUNTING
CHUCK Nº | CAPACITY | DIM "A"
36238 | 0 TO ¼ | 15/32
36239 | 0 TO 5/16 | 5/8
36237 | 0 TO 3/8 | 1 1/32
36236 | 1/64 TO ½ | 1 1/4
SHIPPED STANDARD UNLESS OTHERWISE SPEC.
¾-20 UNF-2A THD ON SPINDLE
¾-12 N-2LH THD
1.38 +.001 -.000 PILOT DIA.
3" DIA
3.365 DIA
3/8" NPTF AIR INLET
AIR REGULATOR TO MOTOR

No.	Capacity	Dim. A
35079	1/8 - 3/8	1 9/16
35069	1/4 - 9/16	1 31/32
35074	1/4 - 3/4	2



PRECISION COLLET

APPLIES TO MODELS HAVING
2,500 RPM
4,600 RPM

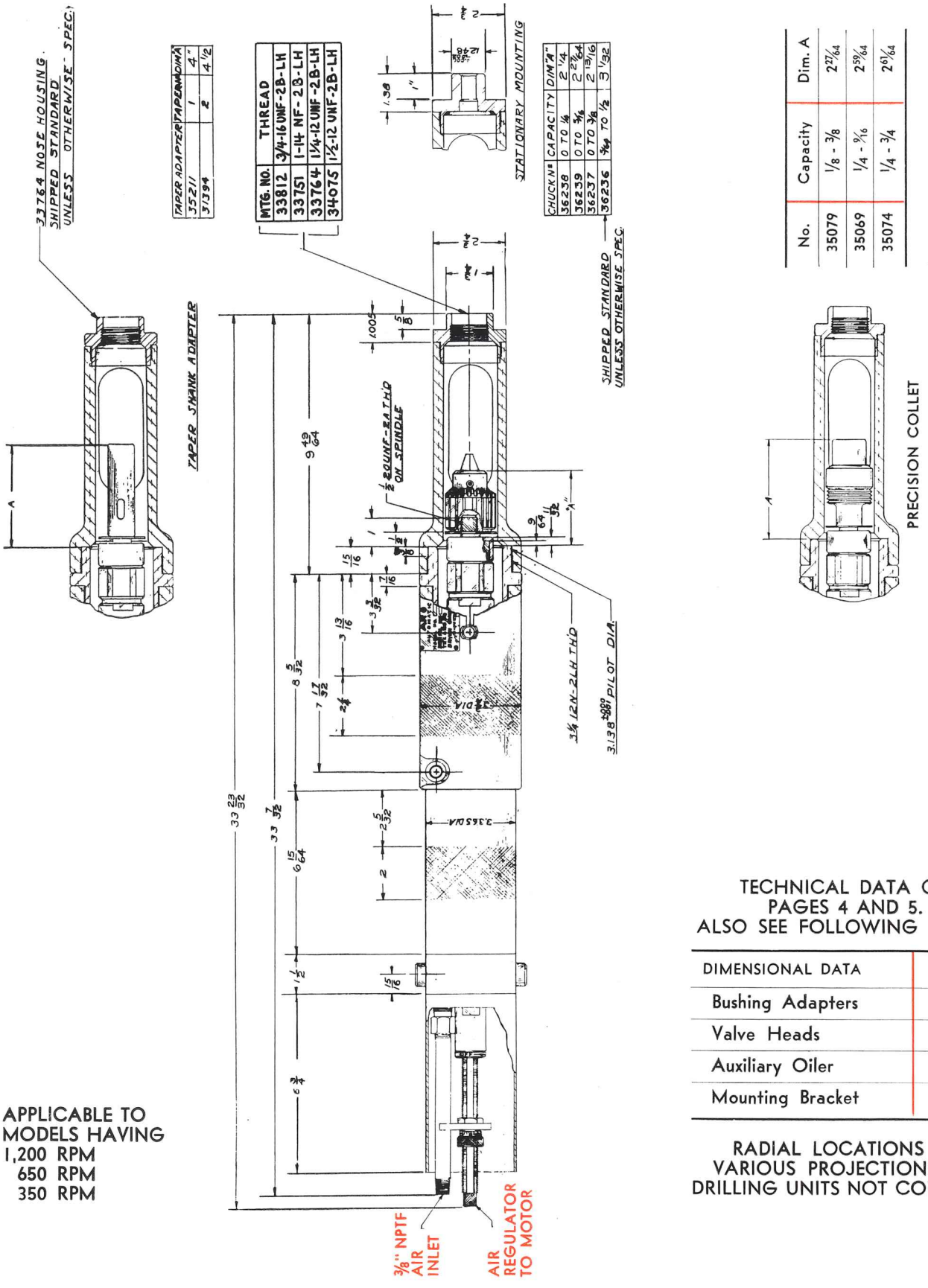
TECHNICAL DATA ON PAGES 4 AND 5.
ALSO SEE FOLLOWING PAGES:

DIMENSIONAL DATA	PAGE
Bushing Adapters	8
Valve Heads	21
Auxiliary Oiler	21
Mounting Bracket	28

RADIAL LOCATIONS OF VARIOUS PROJECTIONS ON DRILLING UNITS NOT CONSTANT

ARO

4" STROKE AUTOMATICS WITH DOUBLE REDUCTION GEARING


33764 NOSE HOUSING SHIPPED STANDARD UNLESS OTHERWISE SPEC.
TAPER SHANK ADAPTER
TAPER ADAPTER | TAPER | DIM A
35211 | 1 | 4"
31394 | 2 | 4 1/2
MTG. NO. | THREAD
33812 | 3/4-16 UNF-2B-LH
33751 | 1-14 NF-2B-LH
33764 | 1 1/4-12 UNF-2B-LH
34075 | 1 1/2-12 UNF-2B-LH
STATIONARY MOUNTING
CHUCK N° | CAPACITY | DIM "A"
36238 | 0 TO 1/4 | 2 1/4
36239 | 0 TO 3/8 | 2 27/64
36237 | 0 TO 3/8 | 2 13/16
36236 | 1/16 TO 1/2 | 3 1/32
SHIPPED STANDARD UNLESS OTHERWISE SPEC.
1/2 EQUIP-BATH'D ON SPINDLE
1 1/4 12 N-2 LH THD
3.138 +.000 -.001 PILOT DIA.
3/8" NPTF AIR INLET
AIR REGULATOR TO MOTOR
APPLICABLE TO MODELS HAVING
1,200 RPM
650 RPM
350 RPM

No.	Capacity	Dim. A
35079	1/8 - 3/8	2 27/64
35069	1/4 - 9/16	2 5/64
35074	1/4 - 3/4	2 61/64

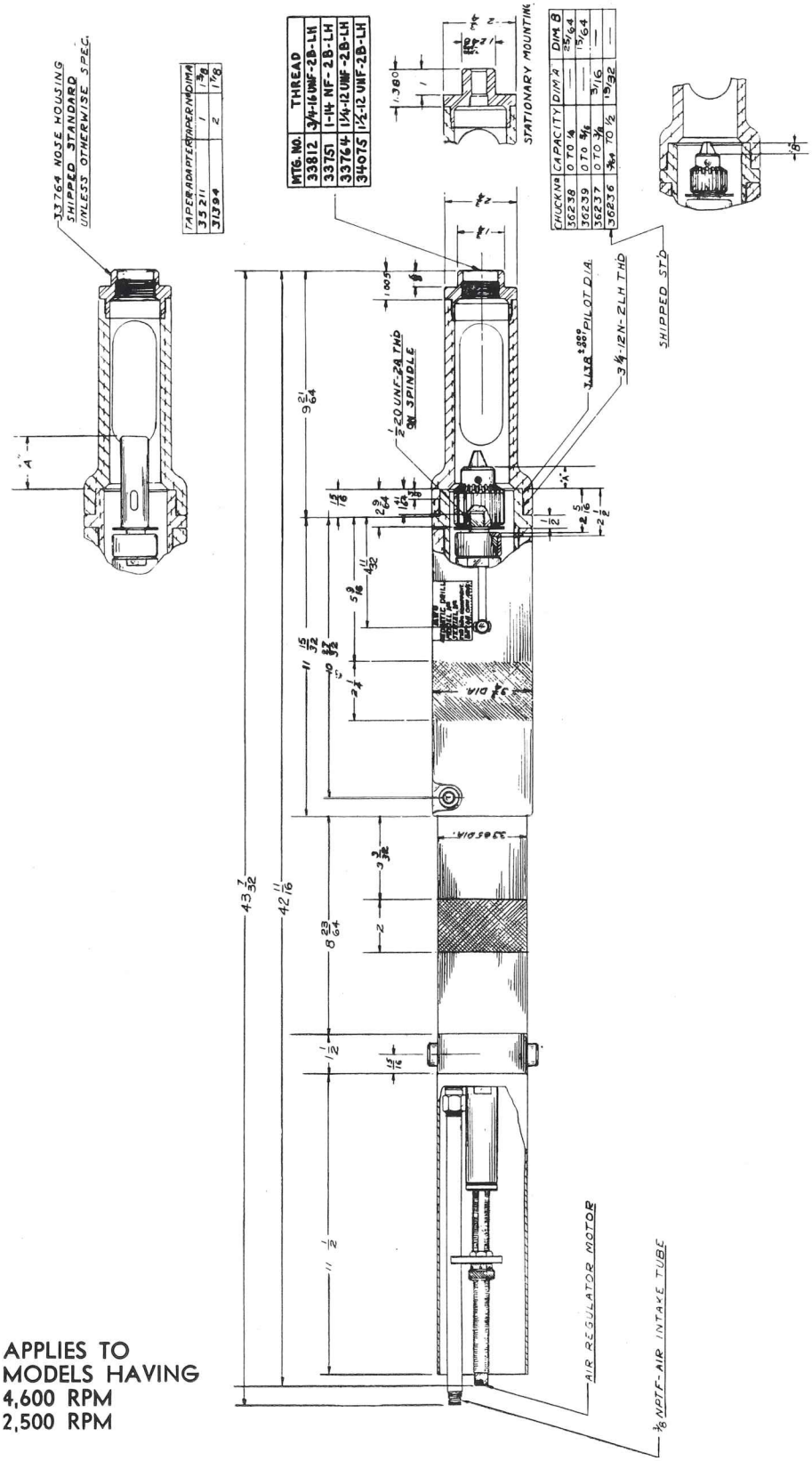
TECHNICAL DATA ON PAGES 4 AND 5.
ALSO SEE FOLLOWING PAGES:

DIMENSIONAL DATA	PAGE
Bushing Adapters	8
Valve Heads	21
Auxiliary Oiler	21
Mounting Bracket	28

RADIAL LOCATIONS OF VARIOUS PROJECTIONS ON DRILLING UNITS NOT CONSTANT

DIMENSIONS — AUTOMATIC DRILLS

6" STROKE AUTOMATICS WITH SINGLE-REDUCTION GEARING


33764 NOSE HOUSING SHIPPED STANDARD UNLESS OTHERWISE SPEC.
TAPER ADAPTER NUMB
35211 1 3/8
31394 2 1 1/8
MTG. NO. THREAD
33812 3/4-16 UNF-2B-LH
33751 1-14 NF-2B-LH
33764 1 1/4-12 UNF-2B-LH
34075 1 1/2-12 UNF-2B-LH
STATIONARY MOUNTING
CHUCK NO. CAPACITY DIM A DIM B
36238 0 TO 1/4 — 25/64
36239 0 TO 3/8 — 15/64
36237 0 TO 3/8 3/16 —
36236 3/4 TO 1/2 15/32 —
1.380
SHIPPED STD
1/2-20 UNF-2A THD SW SPINDLE
1.118 +.000 -.005 PILOT DIA.
3/4-12 N-2 LH THD
PRECISION COLLET
AIR REGULATOR MOTOR
1/8 NPTF-AIR INTAKE TUBE

No.	Capacity	Dim. A
35079	1/8 - 3/8	5/8
35069	1/4 - 9/16	1 1/8
35074	1/4 - 3/4	1 5/32

APPLIES TO
MODELS HAVING
4,600 RPM
2,500 RPM

TECHNICAL DATA ON
PAGES 4 AND 5.
ALSO SEE FOLLOWING PAGES:

DIMENSIONAL DATA	PAGE
Bushing Adapters	8
Valve Heads	21
Auxiliary Oiler	21
Mounting Bracket	28

RADIAL LOCATIONS OF
VARIOUS PROJECTIONS ON
DRILLING UNITS NOT CONSTANT

ARO

6" STROKE AUTOMATICS WITH DOUBLE-REDUCTION GEARING

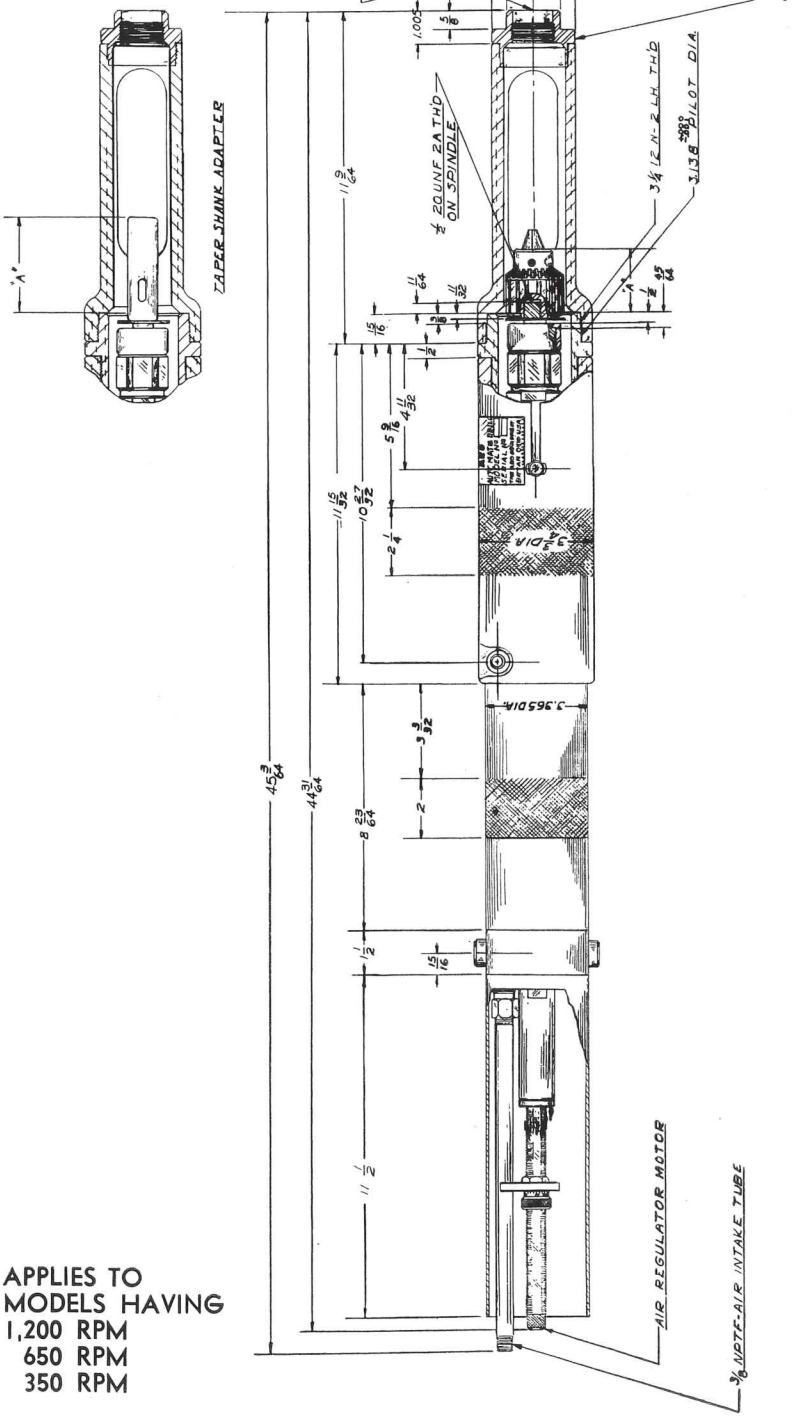
TAPER ADAPTER	TAPER NO.	DIM "A"
35211	1	3 31/64
31394	2	3 49/64

MTG. NO.	THREAD
33812	3/4-16 UNF-2B-LH
33151	1-14 NF-2B-LH
33764	1 1/4-12 UNF-2B-LH
34075	1 1/2-12 UNF-2B-LH

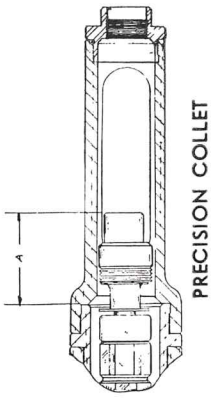
CHUCK NO.	CAPACITY	DIM "A"
36238	0 TO 1/4	1 27/64
36239	0 TO 5/16	1 37/64
36237	0 TO 3/8	1 63/64
36236	1/4 TO 1/2	2 13/64

SHIPPED STANDARD

33764 NOSE HOUSING SHIPPED STANDARD UNLESS OTHERWISE SPEC.



APPLIES TO MODELS HAVING
1,200 RPM
650 RPM
350 RPM



PRECISION COLLET

No.	Capacity	Dim. A
35079	1/8 - 3/8	2 27/64
35069	1/4 - 9/16	2 59/64
35074	1/4 - 3/4	2 61/64

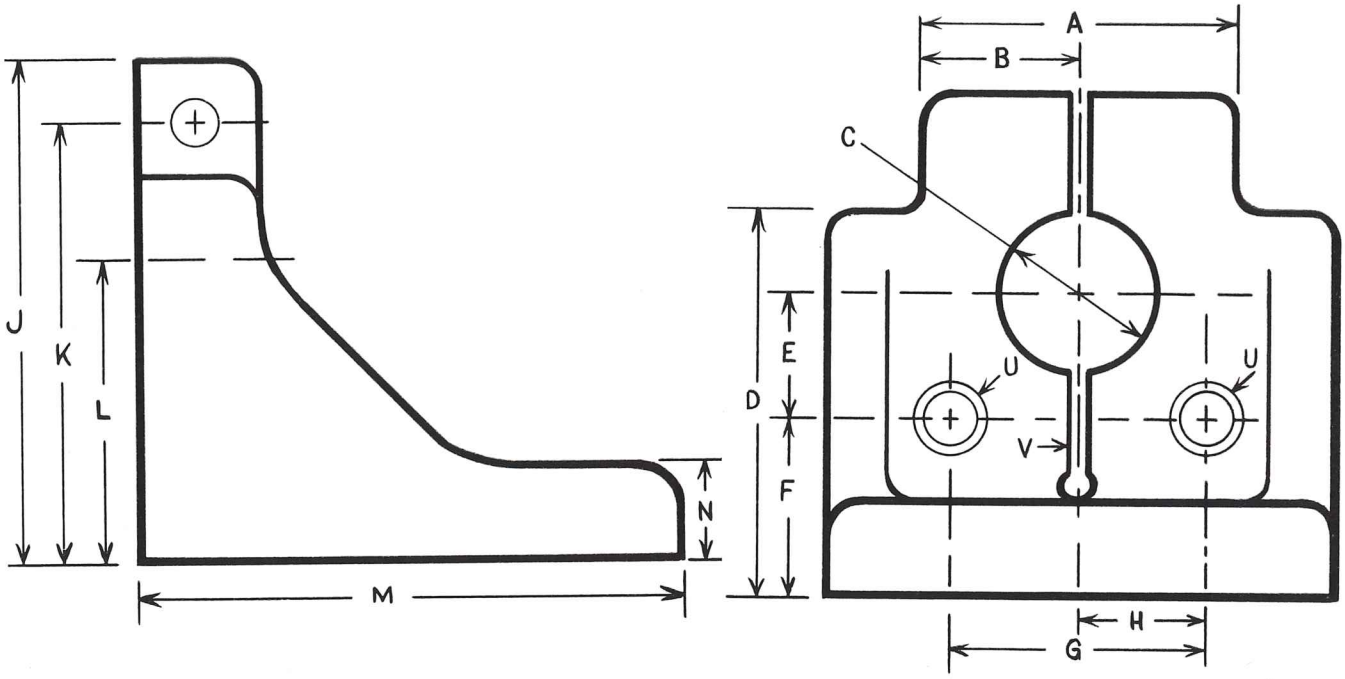
TECHNICAL DATA ON PAGES 4 AND 5.
ALSO SEE FOLLOWING PAGES:

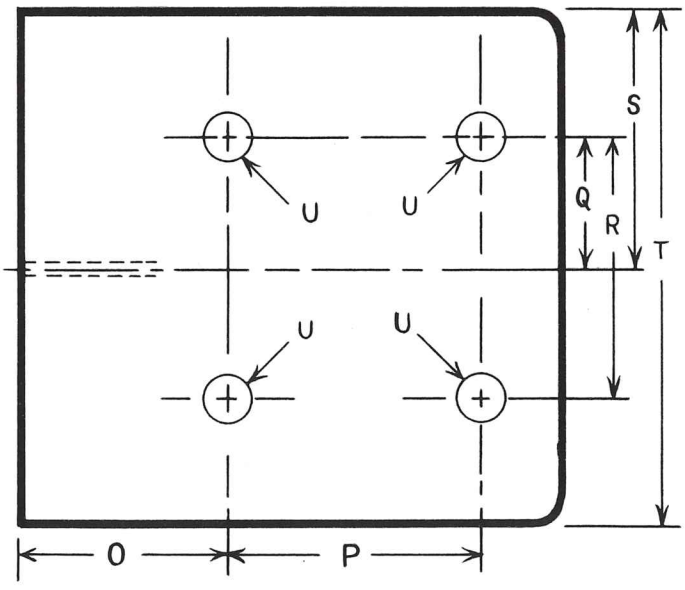
DIMENSIONAL DATA	PAGE
Bushing Adapters	8
Valve Heads	21
Auxiliary Oiler	21
Mounting Bracket	28

RADIAL LOCATIONS OF VARIOUS PROJECTIONS ON DRILLING UNITS NOT CONSTANT

MOUNTING CLAMP DIMENSIONS

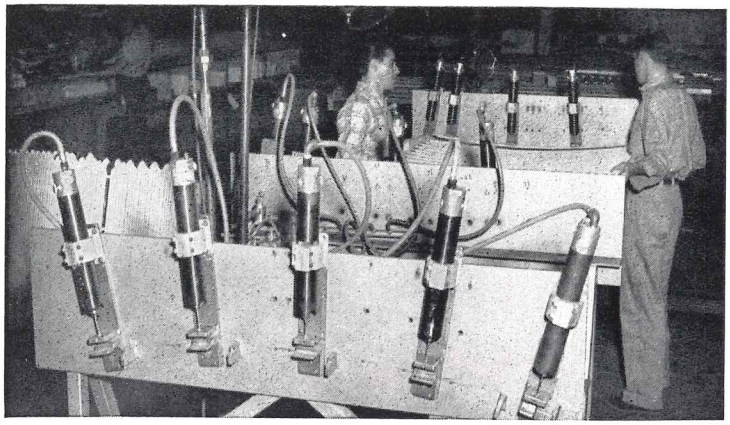
34925 MOUNTING CLAMP FOR AUTOMATIC DRILLS



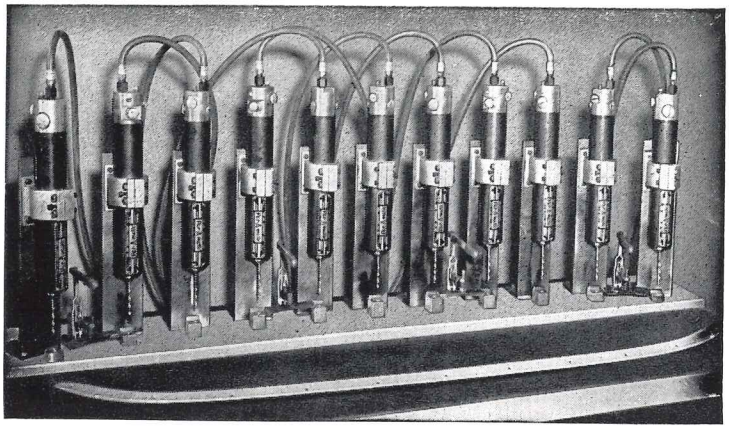


A	2½	H	1	P	2
B	1¼	J	4	Q	1
C	1¼	K	3½	R	2
D	3	L	2⅜	S	2
E	1	M	4¼	T	4
F	1⅜	N	3/4	U	25/64 dia.
G	2	O	1⅝	V	1/8 slot

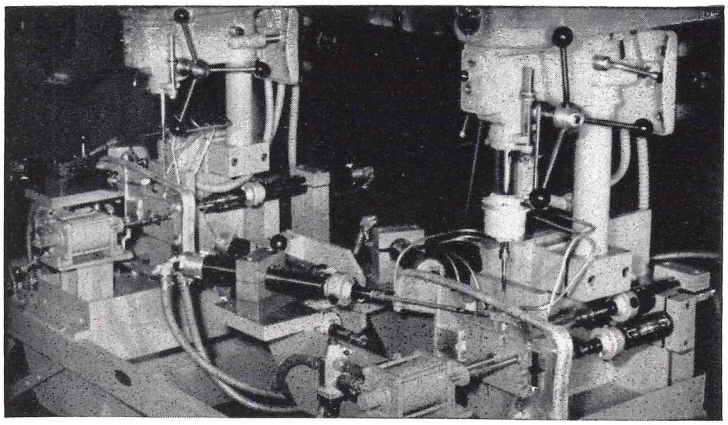
TYPICAL INSTALLATIONS PROVE PAR-A-MATICS' ADAPTABILITY



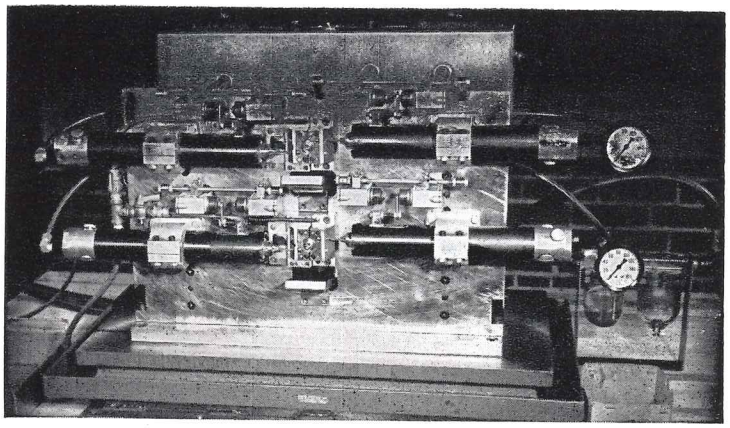
Metal awning manufacturer uses Par-A-Matics to drill holes in convex and concave section of awning.



11 holes are drilled simultaneously in automobile instrument panel component by battery of Par-A-Matic Drills.



Manufacturer augments standard machines with multiple Par-A-Matic set-up for reaming and tapping outboard motor tiller casting.



Wire holes in aircraft hex nuts are drilled by Par-A-Matics mounted in semi-automatic work holding fixture. Operator merely inserts hex nut in vise jaws to start cycle; automatic ejection.

STANDARD WARRANTY

Following the reasonable assumption that any inherent defect which might prevail in a product will become apparent to the user within three months from the date of purchase, all equipment of our manufacture is warranted against defects in workmanship and material under normal use and service and we will repair or replace at our factory any equipment or part thereof which shall within 90 days after delivery to the original purchaser indicate upon our examination to have been defective.

Our obligation is contingent upon proper use in accordance with factory recommendations and instructions and shall not apply to equipment which has been subject to misuse, negligence, accident or tampering in a way so as to affect its normal performance.

use

AIR POWER WITH PUSH-BUTTON OPERATION

for low-cost, high-speed drilling!

ARO

SELF-FEED DRILLING UNITS

- AUTOMATIC DRILLS
- PAR-A-MATIC DRILLS
- TAP-A-MATIC TAPPERS
- BANT-A-MATIC DRILLS
- MIDG-A-MATIC DRILLS

See inside

Form 5753-TR83

Printed in U.S.A.